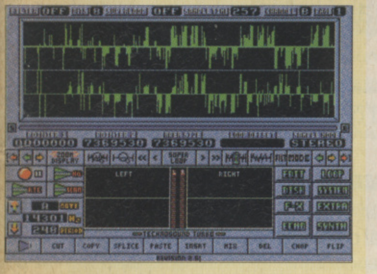
TONS OF
TIPS
FOR YOUR
MACHINE
see pages
16-25,
31-33,
44-45

Issue 146 • 24th August 1991 • 88p

NEW COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

AMIGA


LEFT
RIGHT
CUT
COPY
SPLICE
PASTE
INSRT
MIX
DEL
CHOP
FLIP
STEREO

TURBO SOUND

The great upgrade to TechnoSound is here

MAC

NOTEBOOK!

But Apple's been pipped – this is a brilliant clone!

GAMES

SARAKON

The new Mah-Jong?

PLUS HOT NEWS!

INCREDIBLE!

time traveler
SEGA

SEGA'S SECRET HOLOGRAPHIC ARCADE GAME

– But is it the future of home entertainment?

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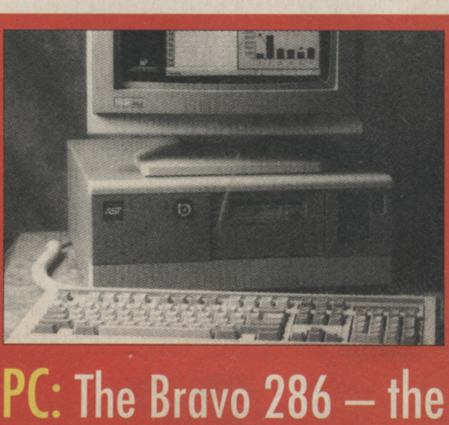
⑫ 20 Capt Lee Gdns

ATARI ST: CD-I drives for your ST are on their way!

Find out why, how and when on page 5



PC: The Bravo 286 – the best value yet? – p49

MULTIGEM

File Edit Block Layout Style Spelling Graphics Help
00:04:34
B:\
WORDPLUS.PRG
WORDPLUS.RSC
WORDXTRA.HLP
BOLD
UNDER
ITALIC
LIGHT
INS MODE
F6 DEL LINE
F7 NEW PAGE
F8 CENTRE
F9 INDENT
F10 REFORMAT
CAPS LOCK

GenST Editor/Assembler from HiSoft v 2.08

B:\SECOND.MAN\TEMPUS.TXT

Quick notes to TEMPUS TEXT EDI

TEMPUS is a text editor. It deals with ASCII o

Although TEMPUS doesn't have the features o
(bold, underline, headers, paging, etc), wr

312491 bytes used in 19 items.

B:\ARTICLES\MULTITAS.K\BODY2.DOC

Product: MultiGEM
Compatibility: Atari ST/STE/TT
From: Grey imports
Contact: Try: Scotsoft International

Multi-tasking on your ST is here – exclusive review p53

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ABC audited circulation July-December 1990:20,204 copies per week
We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below.

While every care is taken in the preparation of New Computer Express, Future Publishing cannot be held responsible for the consequences of any errors that may occur.

• Subscriptions: The Old Barn, Somerton, Somerset (0458) 74011
• Printed by Redwood Press, Melksham, Wilts
• Distributed in UK and Eire by Future Publishing (0225 442244), rest of world by Comag (0895 444055)

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Amazing arcade action!

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• ***Time Traveler*: setting new trends?**

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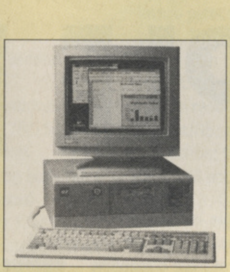
But can it really make working on your machine that much easier? Find out on page 49

• AST's Bravo PCs both look the same from the outside, but inside it's a different story



PC perfection?

Are AST's two new machines special enough for you to change to a new model? – page 53

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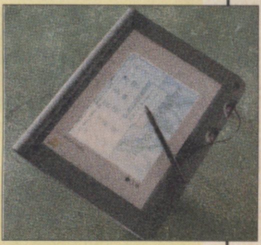
News: hot stuff, but can you handle it? – page 4-8

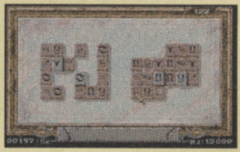
What's New

A British designed Pen input computer, PC TV Tuner, Budget 286 PC, V32bis modem and 386SX cache for the PC – page 10



• Want to swap your keyboard for a pen? You can with the VPi386 pen-input computer

• *Sarakon*– Shanghai surprise on the Amiga, ST and PC



Games Week

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A £600 Amiga genlock is up for grabs

Fancy yourself as a home movie maker? You can add the professional touch to your videos if you win this prize – p 58

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NIBBLES

Nintendo makes moves in Europe

Massive Japanese computer manufacturer Nintendo has announced that it would like to have eight million Game Boys in European homes by the end of 1992.

The company also plans to have shifted 10 million Super Famicom games consoles in Europe by the same period.

IC on the wall

Those ever wacky Californians have just gone one step further in their search for a bit of history of their own. A plaque will go up on the wall at 844 East Charleston Road in Palo Alto California in honour of Dr Robert Noyce, the inventor of the integrated circuit.

It joins the plaque in Silicon Valley where Bill Hewlett and David Packard cooked up their computer in a garage.

Commodore's $60m profit

No doubt due to the over whelming success of the Amiga, Commodore has posted 1991 fiscal year results of $57.4 million on the back of sales worth $1,047.2 million. The company report that this is an 18 per cent increase in sales on the same period in 1990. Will it do even better after CD-TV hits the shops in bulk?

Hypercard for the ST?

An enterprising company has released a Hypermedia package for the ST. The program enables the user to create a series of cards containing text, graphics and sound.

WooleySoft reckons that the program is a perfect teaching tool due to the way in which the various cards can be accessed.

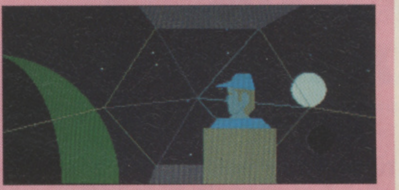
No pricing details are available yet but WooleySoft can be contacted at
Humblesknowe Cottage,
Ramoyle, Dunblane,
Perthshire, Scotland.

Mercenary III: defend Dion from evil

Paul Woakes, the chap who brought you the impressive *Mercenary* has been busy creating a follow up. The original game was unique in that Woakes created an entire solar system of diverse planets, any of which you could visit and travel about on.

Mercenary III is different to its predecessors in that its taken on board the ever trendy green issue. In this game you've got to thwart an evil chap who wants to extend his open cast mining operations to the lush planet of Dion. As with the other games, there isn't just one solution to the game and Woakes is hoping to keep the insularity element in the game.

New twists in the release include character interaction, air combat sequences and a public transport system for the tamer gamer. Novagen reckons that the game will be available in the autumn on both Amiga and ST. ■



• In *Mercenary III* its the green isses that you have to protect

Archimedes highlights

Three new programs have been released for the Archimedes.

Highlighter (£50) is an information handling package which links graphics and text together in much the same way as Hypercard does on the Mac.

Recall (£50) is a database designed with children in mind

Glimpse (£10) is a utility which facilitates the display of proprietary sprite files while running a DTP program. Sherston Software can be contacted on 0666 840433. ■

Outbound launches 3 Mac-compatible notebooks in US

APPLE IS PIPPED!

Just two months before Apple is to launch its own notebook style portables, US Mac cloners, Outbound, unveiled a family of three compatible notebooks at Boston's MacWorld on 6 August.

Running at 20MHz, weighing only 6lb and measuring 8.5 x 11 x 2 inches, the three machines include internal floppy drives and a variety of CPU, memory and hard disk options. Unlike Outbound's former portable, bona fide Mac ROMS are included.

Claimed to run for up to three hours on rechargeable batteries and featuring a backlit 640x 480 pixel LCD screen, the three machines are attractively priced with the entry level model coming in at $2,500. As yet no UK distribution has been tied up so potential customers should contact the company direct on 0101 303 786 9200.

The Notebook System 2000 comes with a 68000 processor, 2Mb of RAM and either 20Mb or 40Mb hard drives while the System 2030 features a Motorola 68030 processor running at 20MHz, 4Mb of memory and optional 40 or 60Mb drives. Both are available immediately.

•Outbound's new 20MHz Mac notebook with 20Mb hard drive – fast, light and a cheap alternative at only $2,500?

The final model in the series is the 2030S which won't ship until the end of the year. This runs on a 68030 and will offer virtual memory capabilitiesover and above the 4Mb on-board RAM. Hard drive options are the same as the 2030.

In the face of Apple's tough policy on copyright infringement, Outbound appears to have found an ingenious solution to the problem of using Macintosh ROMS in its new notebooks. The company sells the systems with a used Mac, from which it transfers and installs the ROMS, and then repurchases the 'shell' from the user! Thus, the user receives a ROM-equipped, ready to use Outbound. Such is the level of resulting compatibility that even Apple's brand new System 7 operating system can be run on the range.

Interestingly, the range features a TrackBar device located near the keyboard's space bar which functions as a mouse alterntive. An Apple mouse can be connected if preferred, as can any other Mac peripheral as the notebooks offer AppleTalk,SCSI and Apple Desktop Bus ports. The units also include a built-in microphone and 2-inch speaker.

At the entry level price of $2,529, rising to $4,299 for the 60Mb 2030 machine, the notebooks are expected to compete very closely with Apple's forthcoming range expected in late October. ■

Domark deals out sport and violence

ULTRA VIOLENT PITFIGHTER

The Atari coin-op *Pitfighter* came in for some flack due to the completely brutal 'sport' which it depicts. Domark has acquired the licence to the game and has roped in the Teque programming team to convert it.

The idea of the game is to survive a series of bouts in a pit. The reason it's so violent is that you can use any means to get your opponent on the floor, this includes kicking him/her when they're down or stabbing them with a knife.

CLOCK 0:34
1:50 RECORD

• In *Pitfighter* you have a choice of character – Buzz, Ty or Kato. Each has a set of specialist moves and fighting skills

The audience watching the match also has a tendancy to go against you, so it's a good idea to stay away from them; get too close and you'll find yourself being strangled by a large biker with a chain.

Pitfighter will be available for the PC, Amiga and ST at £24.99, Commodore 64 (£14.99 disk, £10.99 tape), Amstrad (£17.99 disk, £10.99 tape) and Spectrum (£17.99 disk, £10.99 tape). Due for release in November just in time for a bloody Christmas.

RUGBY RUCKS

Even if you've only caught 10 minutes of TV in the last month, you can't have failed to notice that this year's World Cup rugby championships are being held in Britain, thus Domark is producing an official *Rugby - The World Cup* simulator.

Domark claims its simulator "is to rugby what *Kick Off* is to football." It's included all that fun-filled rugby action, such as kicking, shirt-pulling, shiving and barging in the game, along with the stuff like tries, conversions, line-outs, fouls and scrums.

Release is set for late September, available on Amiga and ST for £24.99 and Commodore 64 £14.99 disk, £10.99 cass. ■

WALES 06
15 AUSTRALIA

• All 16 teams are included in *Rugby – The World Cup,* so you can watch England thrash Wales and then get beaten to a pulp by the New Zealand team

Atari all set to directly compete with Commodore's CDTV

CD-INTERACTIVE FOR ST RANGE

Having revealed that it has already developed a CD-I based computer (the Falcon), Atari has gone one step further and revealed that this technology is to be made available to all ST owners.

Bob Gleadow has confirmed that the Compact Disc Interactive technology which will appear in the Falcon super computer will be released in a standalone box for the ST, Mega ST and TT. The CD-I drive it will be using is the Philips unit.

Philips, Sony and Matsushita have entered into an accord to develop a CD-I standard, one that bears absolutely no resemblance to Commodore's CDTV machine. Therefore Atari is setting itself up in direct competition to its arch-rival, an unsurprising move considering the company's traditional price beating history.

MASSIVE STORAGE

The Philips drive can store up to 650Mb of graphics and sound on one disc, over 800 times the information you can store on one floppy disk. What's more, this information can be high resolution graphics (up to 16 million colours) or high quality sound (up to 2.4 hours of hi-fi standard).

Atari is unwilling to reveal when it is going to be releasing the CD-I add-on and it is also being tight lipped about the price of the box. It's likely to be lower than CDTV though. Apart from anything else, the Atari unit will not include an ST inside the box. Given these criteria a price of about £400 seems likely. ■

ST CD-I DRIVE TECH SPEC

SIZE: standard 12mm single-sided optical discs
CAPACITY: 650Mb
READ SPEED: 170K per second with constant linear velocity
SCREEN RESOLUTION: normal – 384x280 pixels, double : 768x560
PICTURE QUALITY: natural photographic pictures can be used. A full screen picture at normal resolution would occupy 105K, so 6,340 of these pictures can be stored on one disc.
ANIMATION: usually limited by the rate at which data can be read. Here, assuming 12.5 frames/sec, there's about 14K available for each picture in the sequence
FULL MOTION VIDEO: CD-I players have four display planes, including a foreground cursor plane, two 8-bit image planes and a background plane. The encoding algorithm gives better than S-VHS quality running at 25/30 frames per second at full-screen resolution.
COLOURS: available at normal resolution: 16 million. Available with RGB 555 encoding method: 32,768
EFFECTS: Cut, dissolve, granulation, blind, wipe, square
TEXT: Held on disc either as characters or bit-mapped pictures
AUDIO: conventional CDs can be played. 72 minutes of music can be recorded on the disc. Alternatively, two stereo channels can play back 4.8 FM hours of Mid-fi music or eight AM channels can play back 9.6 hours of speech.

Disks erased while-u-wait

Should security in your place of employment be a major obsession, you might like to know about a company which specialises in supplying equipment which can erase every last bite of information from your disks.

An office eraser will set you back £500, but hey, what's the price of peace of mind? Contact Verity Systems on 0252 317000. ■

Electric Brain

Console freaks will be pleased to learn of a new magazine devoted solely to advanced gaming gizmos and playing tips.

Electric Brain is a 32 page fanzine mainly devoted to the Sega MegaDrive, NEC PC Engine and Nintendo Super Famicom. Besides hardware news and the newest software releases there's tons of tips on getting the most from your games.

It's available for £1.30 from 125 Arnold Road, Bestwood Estate, Nottingham, NG5 5HR and is well worth checking out ■

Sharpen up your storage

Sharp has produced a 45 minute video to help IQ electronic organisers get the most from their machines.

Knowing Your Organiser features hints and tips showing how the IQ can make your working day run more smoothly. It stresses the benefits of storing information such as phone numbers, addresses and diary dates electronically.

It also demonstrates how the full range of IQ peripherals work, including IC cards, and has a section on the history and development of the organiser. The advantages of being able to transfer data to and from PCs is also described. Knowing Your Organiser is Available for £7.95 from IQ Mail Order Services on 061-928 5559. ■

Complete VCR control

If Sony has its way, you won't just be using your video with a remote control, you'll be connecting it up to the computer and controlling tapes from it. The company has launched its Vdeck Hi8 8mm VCR which can be completely controlled from an Apple or a PC.

Of more interest is Sony's Multidisk player 1100. This ingenious piece of technology can play back any disk media all the way from audio CDs up to laser discs. The computer can control this via a serial link and Sony's Video System Control Architecture (VISCA) software.

Quite what the applications for this kind of media are, Sony didn't say. However one can envisage a situation where presentation could be stored on CD or laser disc and then controlled with considerable flexibility by a computer. The company says that both machines will be available by the end of 1991. ■

Price change

The news story on page six in last week's issue titled "Tense, nervous headache," quoted an incorrect price. It should have read £349.99, not £49.99. ■

Victorsoft touches base with the ST

The German company Victorsoft has released a relational database called 1st-Base for the ST which can be run as either a program or a desk accessory. The actual size of the program has been kept to an absolute minimum to enable all ST owners to utilise plenty of space for actual record.

As the program can be run as a desk accessory, any data which is stored within the program can be made available from within any other GEM-based package such as a word processor or a spreadsheet, or from even the desktop.

The small size of the program (it's well under 100K) hasn't led to the author skimping on features. Sophisticated search functions have been included which work on the basis that each card is unique, rather than the fact that each card entry has a number.

Information stored in the database can be downloaded into any GEM program. Victorsoft has included support for popular databases such as *Dbase* and *Superbase*, although even if there isn't an import feature in your favourite GEM program, 1st-Base can play back a record into the program in much the same way as a macro plays back data.

Victorsoft is seeking a British distributor for 1st-Base. Currently the program can be bought direct from the company for £98. Contact Victorsoft on 01049 4153 52323. ■

Video Toaster for the Mac

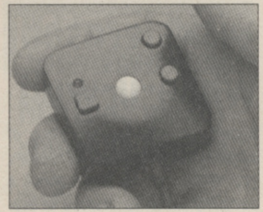
The highly acclaimed Video Toaster, from American Amiga developers, NewTek, is now available for the Macintosh. Launched at MacWorld Boston, the system offers Mac users a range of video processing effects hitherto only available on the Amiga, and at a fraction of the price for similar equipment used by professionl video studios.

The $3,995 system is essentially an Amiga B2000 with a 'smart' serial lead connecting it to the Mac. The Amiga-style interface can then be navigated by mouse to control up to seven video sources and includes icons to utilise frame grabber, paint package, broadcast resolution rendering, a plethora of live video special effects, character generator, colour processing and dual frame buffers.

Unfortunately though for UK videophiles, both Amiga and Mac Video Toaster users will have to wait another year for a PAL version.

VIDEO TOASTER

• Video Toaster: Mac and Amiga combine to produce the equivalent a $60,000 video studio



• The teensy Thumbelina can operate on any surface at any angle

Mini Mouse

We've had the neolithic influenced mouse, the infra-red mouse and even the tortoise shaped mouse.

However, If you thought you'd seen every permutation of these trusty pointer wigglers, then you're in for a shock; get ready for Thumbelina.

This teensy mouse, nick-named Sweatpea, is only the size of a sugar cube and yet still has three buttons on it. Appoint, the company that brought out the MousePen range will be launching the one and a half inch square device this month.

Thumbelina uses the proprietary friction operated technology which the company used in the MousePen range. This means that the mouse can operate on any surface and at any angle; Appoint also reckons you can use it in a weightless environment.

With two input and one drag lock button it's hard to believe that this mini-mouse is going to be as ergonomic as the company claims, though it says that it's paid great attention to this aspect of its design. They also believe that unintentional input isn't a problem even though the unit could get totally lost beneath the reams of paper which usually accumulate in "paper-less" offices.

Four versions of the mouse are planned, covering the IBM PS/2, standard PCs, IBM laptops and the Apple range. Thumbelina costs £99 from K.S.I. Ltd on 0590 644255. ■

EXPRESS...

Brand new versions of Lotus *1-2-3* and Ami Pro version 2 stored on an AST 386SX computer were stolen by a thief-in-the-know from offices of the Lotus user group.

...SNIPPET

Individuals, not corporates are to blame, says US survey

PIRACY COSTS $2BN A YEAR

Software piracy is costing American software houses $2 billion a year, a report from the Software Publishers Association (SPA) reveals.

The $2 billion refers solely to the business market, taking no account of the problems of games software piracy.

The survey was compiled by working out hardware and software sales and then cross-referencing these to the average numbers of packages which are actually in use in the United States. The massive figure, however, is believed to be an extremely conservative estimate as the study only compared software sales in a single year, with the number of new machines sold in the same period.

The trend over the last three years has shown a definite downwards movement. For example in 1990 the piracy estimate was $2.4 billion, in 1989 it was $2.5 billion and in 1989 an amazing $2.9 billion. The SPA is currently working on a survey of games software piracy.

BACK IN THE UK

Meanwhile on this side of the Atlantic, a survey has revealed that most British companies are still risking prosecution through the pirating of business software. The Data Business Ltd carried out a survey of the Time's top 100 companies and illicited a very interesting response.

Results on the survey show that the main threat isn't deliberate corporate piracy, but casual copying by staff for personal use.

In fact the survey showed that while 85 per cent of these companies had a policy designed to comply with the 1988 Patent, Design and Copyright Act, more than half admitted that they had not actually done anything to about staff pirating software. ■

Want a change of image?

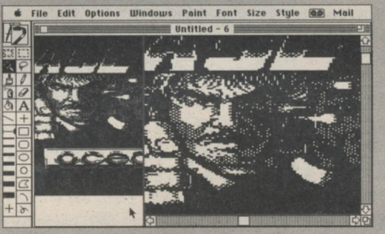
The Aldus Corporation, purveyor of the popular DTP package *Pagemaker*, has announced version three of *SuperPaint*, the integrated painting, drawing and image enhancing software. The program which runs on the Apple range of computers will be available this month.

Enhancements in the updated program include support for 1, 8, 16 and 32-bit documents on both monochrome and a colour standards. The major new feature to the package is that it now includes image enhancement functions such as brightness, contrast, colour balance, masking, smudge diffuse, lighten, darken and invert.

These kind of image enhancing features are sure to increase the appeal of this painting package. Prior to this if you wanted to tweak your scans you'd have to use packages such as *Photoshop, Studio 8, Studio 32* and *Digital Darkroom.* The idea of incorporating such features into a comprehensive drawing program will mean that graphic designers will have to do less program swapping to get the effect they desire.

Colour gradients have always been sorely lacking from *SuperPaint*. Now gradual transistions from one colour to another are possible with up to 256 colours in one gradient. Linked in with this is the new texture function which enables several fill patterns to be used or created. Moreover, EPS fills from programs such as *Aldus Freehand* can be imported into the program.

Keyboard shortcuts and a simplified control panel will mean that the program is considerably easier to use; previously *Superpaint* had two control panels dealing with all the functions,



• *Superpaint* version 3 – everything a graphic designer will need

EXPRESS...

Domark reckons that it has coined in £1m from its *3D Construction Kit* since its launch in early June this year.

...SNIPPET

Big Blue's birthday

Forget that policemen are getting younger and that chatting nostalgically about Mr Benn, Randall and Hopkirk (deceased) and Marine Boy bemuses your peers, here's some news that's really going to make you feel old: the original IBM PC is 10 years old this month.

The original PC had an Intel 8088 CPU, a 64K memory and one low density 5.25-inch floppy drive unit. All that and a case which now looks more at home in an awful science fiction movie, like The Black Hole.

MS-DOS version 1.0 was supplied with the machine, though you'd be hard pressed to do anything with it, because nothing else came with it.

Ten years on, there are far superior PC machines available with several hundred pounds worth of software and MS-DOS 5.0. ■

If you wanna be a record breaker...

The producers of *Navigator*, the intelligent map software, is so sure of its software's reliability that it's trying to get into *The Guiness Book of Records*.

The managing director of the firm will attempt to visit all 12 EC countries (a feat in itself), in the shortest possible time, without breaking any speed limits.

A team of drivers will take turns behind the wheel of a Mercedes Diesel 300 SE, taking their route from a laptop running the *Navigator* program which has maps of 33 countries in memory. The team estimates it will take them four to five days to complete the tour. ■

Bend your Renders

The Archimedes may not be the best selling computer of all time, but it's certainly got some of the most impressive hardware.

Clares Software is seeking to take advantage of some of the graphical technology that resides in its cream case with a suite of programs badged under the name of Render Bender II.

The package enables the user to create 3-D ray traced pictures and animations. Clares says the program is fully compatible with the Archimedes RISC operating system and can run a ray trace in multi-tasking mode.

To create an animation, the user simply creates a beginning and end frame and the computer then works out everything between the two. These frames can then be rendered in full colour and finally animated together in the finished sequence.

Price is set at £135, though if you bought the original *Render Bender* you can update it for £75. Call Clares on 0606 48511. ■

Cutting boards

Genoa systems has cut the price on its 386 and 486 PC motherboards. A 33MHz 80386 AT board with ISA bus and 64K cache has been reduced from £775 to £365. Call 0923 33737. ■

Portfolio for the Mac and ST

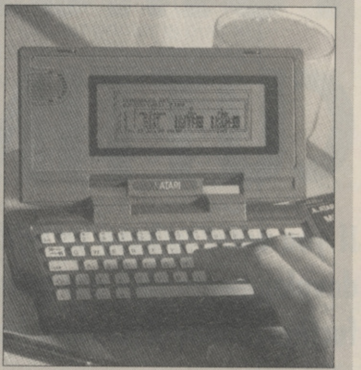
The ever popular Atari *Portfolio* (well, the company claims it's sold 300,000 of them) is to get Apple Macintosh and Atari ST compatability. The handheld PC already has MS-DOS 2.11 software built in, running off an Intel 80C88 microprocessor.

The standard machine comes with 128K of RAM (expandable to 640K) and uses 64K or 128K RAM cards instead of floppy disk media. This has always been seen as one of the failings of the machine, so the two new packages which enable it to link up to a Mac or an ST are likely to be well received.

Both packages cost £69.95 and comprise software and the appropriate serial cable. The Mac version comes complete with an Apple version of *Portfolio*'s diary and address book application programs. This means that you can now compile data on the *Portfolio* and then download this on to a Mac for use in other applications and storage on 3.5-inch or hard disk.

The ST version doesn't include any redesigned software, instead you'll get a communications program and a parallel interface cable. The advantages are that you can now upload text information on to an ST for use in applications such as word processors or databases.

Portfolio now has over 50 peripheral and software applications available and comes complete with an address book, a text editor, a calculator, a Lotus *1-2-3* compatible spreadsheet program and a diary function. Specialist packages such as sales management software and a universal yield calculator are available now. The standard Portfolio costs £199.95. ■



• The Atari Portfolio is likely to become even more popular with its two new packages

New PC boards will be able to receive 119 channels

PLUG INTO TV ON YOUR PC?

If the prospect of watching the television on your PC, while it's working out a maths intensive spreadsheet sounds like fun, then you'll be interested in a brand new board which can supply you with 119 channels of no-doubt thrilling broadcast entertainment.

Desktop TV sits inside your PC and comes complete with its own speaker. With the board installed a PC would be capable of receiving 119 channels of VHF, UHF or Cable television or alternatively, VCR, Videodisc or other RF moluated signals.

The controls for the television or video signals are accessed from the keyboard of the computer with the picture image being displayed on a standard VGA monitor.

IN A DIFFERENT REALM

The Canadian producers of the board, AView Technology believes that it opens up new realms of PC usage namely surveillance and training applications, though it's more likely to be used for lunchtime sessions of *Neighbours*.

Lori Helstone of AView's Technical department told *Express*: "We are currently developing the unit for all the international television standards. This includes a PAL version of the desktop television board which we believe will be ready by the end of the year."

She envisages the price of the board to be about £300 and said that AView Technology was currently looking for a British distributor. For further information you can contact AView in Canada on 0101 416 922 6555. ■

Commodore's Far Eastern plant plans

Just one month after the news that Atari has shut down production of its Lynx hand-held games machine in Taiwan, Commodore has announced that it is going to invest $9.1 million in a plant in the Phillippines.

When in action, the plant will primarily be involved in the production of interface cards and hardware assembly for the Commodore range of machines.

The vast majority of the finished units will be exported to Europe when the plant plans to start production in June next year. ■

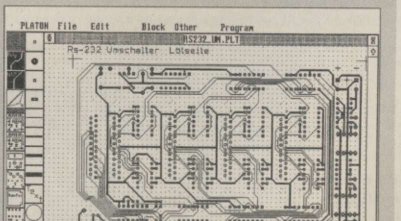
Circuit designer for the Atari range

Expressworks, the company which brought the DynaCADD package to the Atari ST range (coincidentally *the* most expensive program you can buy for the ST), has brought out a PCB designer for 1040 ST, Mega ST and TT computers.

The company is touting its Platon package as "the first truly professsional PCB designer," for the Atari range. The program is a vector CAD package which offers control over both the layout and production stages of PCB design.

Toby Stevens of Expressworks told *Express* that up to six 932mmx 832mm PCBs can be held in memory at the same time. Up to eight layers (from a possible 100) can be shown on screen simultaneously. The program includes a large symbol library including circuit elements, conventional ICs and plug connectors.

You'll have to part with £195 for Platon, £95 for a drill/mill program, another £195 for an outline program, £69 for Gerber and Drilldata or £15 for a demo version. Call Expressworks 0252 726255. ■



PLATON File Edit Block Other Program
RS232_UM.PLT
Rs-232 Umschalter Lötseite

• Platon can dump hard copy to plotters, 9-pin, 24-pin, inkjet and laser printers. Images can be rotated and mirrored from.1:1 to 10:1 scale

Back up your Amiga

Electronic Zoo, better known for its games software, has released a back up system for the Amiga, with the utterly inspiring name of MRBackup Professional.

The company claims that this is the first full featured back up system for the Amiga and is releasing it at £29.99.

The program has over 60 built in back up commands and can save to either floppy or SCSI tape streaming devices. According to the company the program has been tested on Commodore, Supra, Xetec, Cltd, Trumpcard and GCP streaming devices and the user can use standard Amiga DOS or a Fastdisk format.

MRBackup Professional is available now for £29.99. Contact Electronic Zoo on 0285 641541. ■

Petite portable

Sharp's small 286 notebook computer has been reduced from £1,900 to £1,199, if bought from certain authorised dealers.

The computer comes with an external 3.5-inch 1.44 Mb floppy drive and weighs 4.4lbs. It has a 10-inch triple super twist LCD display, one Mb of RAM and a 20 Mb hard drive. ■

PCs make hard work

A survey conducted by *PC Magazine* in America reveals that 70 per cent of PC users don't feel that using a computer has helped them to enjoy increased leisure time.

Moreover nearly a third of those surveyed feel that it has actually increased their workload.

One thousand adults were asked their opinions on the state of computer usage in America today. It revealed that younger Americans are far more likely to use PCs than their older counterparts and that the typical PC user is an 18 to 34-year-old college graduate who is single and has an income of $40,000 (about £25,000).

The survey didn't reveal how many American PC users wished they had bought an Apple. ■

EXPRESS...

Bondwell (Europe) Ltd has incorporated its Portable Alarm System as a standard feature on all its laptop and notebook models.

...SNIPPET

TOMORROW'S CUTTING EDGE

If you want to keep up with the latest technological developments that are going to shape the future, then look no further – they'll be right here on this page

• *Soon you might be able to see* ***The Creature From the Black Lagoon*** *in all its original 3-D glory without those red and blue glasses*

3-D TV, and no silly glasses!

Watching 3-D television programmes might never be the same again if a new form of screening them comes into effect, doing away with the familiar red and blue glasses.

A screen is being developed in Japan that has hundreds of double-convex lenses built into its surface. Each lens on the screen is separated by ridges and sends a separate image to each of the viewer's eyes. From there the viewer's brain combines the image to create the 3-D effect.

Research into displaying objects in three dimensions has shown that when images are filmed by two cameras placed at an eye-distance apart, they can be combined electronically and projected into a screen to create an illusion of depth. The possibilities of using four cameras for even greater depth, and which would also portray the horizontal movements of objects more effectively, is being looked into.

Two Japanese companies are currently developing this type of screen: Japanese Broadcasting and Nippon Telephone and Telegraph (NTT). Both say that commercial applications for the screens are several years away but neither has yet decided how the screens could be practically used or how they would be accepted by the public. ■

Into the virtual Big Blue yonder

IBM has jumped on the Virtual Reality (VR) bandwagon by creating a 'universal artificial world' which, it claims, can be used in many different situations and can be interacted with in different ways (just like all the others).

The company's prototype version of the system makes use of a number of human senses, including sight and hearing, and also responds to physical movements and speech.

Eventually the IBM researchers want the system to be able to make use of other human senses such as touch and feel, and, possibly, taste and smell.

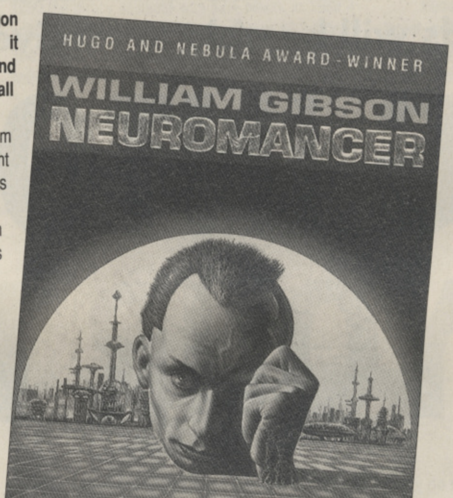
However, the real innovation of the new system is that it interacts with the user in real time; that is the results of different actions are calculated as they happen, instead of just being programmed to occur if, say, a button is pressed.

While other systems are usually created for one specific purpose, IBM's system, it claims, is flexible enough that it can be used in a number of situations.

ADAPTABLE INTERACTION

This flexibility is controlled by the 'dialogue manager' which makes it possible to create worlds that can change, and be changed, quickly and easily. The dialogue manager separates what happens in the world from how the user interacts with it, so both components can be adapted to suit a particular application.

IBM's 'universal artificial world' is only at the demonstration stage. It is currently being run on six RISC (Reduced Instruction Set Computing) System/6000 workstations which are linked together in such a way that their power is distributed – it doesn't matter whether two or six users are working with the system at once, or even if they are different countries. ■



• Will IBM's foray into the world of virtuality go as far as William Gibson's view of the future? Only time will tell

Optical TV distribution

Trials carried out by US telecommunications company Bellcore have shown that TV network broadcasts can be transmitted over fibre optic telephone trunk lines.

In the trials, which were carried out in eight US cities over a period of 20 months all the regional Bellcore telephone companies carried transmissions from major television networks including ABC, NBC and CBS, and distributed them to the network's affiliate television stations. The signals were carried over T-3 fibre optic lines at speeds of 45 million bits per second (bps).

All of the broadcasters were given software that enabled each of them to set up a custom transmission network using standard PCs.

These tests were done purely to see if the broadcasts could be transmitted over fibre optic lines, and don't mean that the phone networks will be doing it on a regular basis. ■

Pocket comms

Dataflex Design is to launch a pocket-sized integrated services digital network (ISDN) adaptor in September at the Business Computing Show in London.

The miniature device supports the Hayes extended AT command set for communications and can also be used as a high speed modem, capable of transmitting and receiving data at 19,200 baud. When two of the adaptors are connected over an ISDN link, speeds of up to 38,400 baud are possible. ■

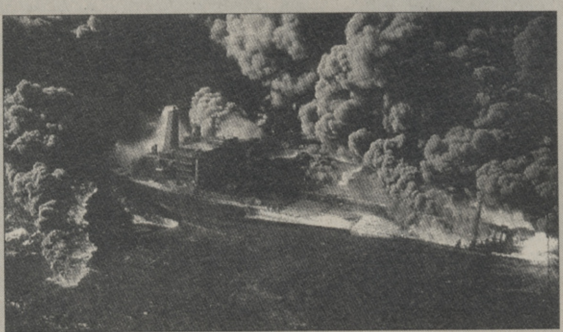
The world's safest computer

Fujitsu has developed what it claims is the first computer that can be used in areas containing highly inflammable or explosive substances such as oil, gas and chemicals.

The company's AcuTote 2916IS computer can be used in such dangerous situations as it is incapable of igniting those substances, Fujitsu claims.

The machine has been subjected to a number of rigorous tests to prove this claim. A special battery pack was developed that was determined intrinsically safe and would not ignite under pressure.

Then the machine underwent water injection, dust injection and drop tests to see if it could withstand those harsh tortures of industry. ■



• If this fire was caused by a computer, Fujitsu's AcuTote 2916IS wouldn't be to blame – it's incapable of lighting substances such as oil

Cold conductors

Superconductivity has taken another leap forward with a new generation of high-temperature superconductors that carry higher currents than ever before.

'High temperature', however, is a relative term; they actually operate at around minus 190 degrees Celsius, which might sound freezing, but usually they have to operate much lower temperatures than that!

The new method of creating the superconductors has been developed by scientists at IBM's Thomas J Watson Research Centre, the Oak Ridge National Laboratory in Tennessee, The Argonne National Laboratory and the Iowa State University's Ames Laboratory.

To achieve this high level of conductivity, the scientists created defects in the superconducting crystal's structure by bombarding the crystals with a high energy ion beam.

These 'defects' consist of materials that are incapable of superconducting found within the crystals. As a consequence, the defects restrict the movement of external magnetic fields which would normally increase electrical resistance and hence reduce conductivity. ■

The Citizen 124D Printer
CITIZEN 124D

CITIZEN PRINTERS

Silica presents some great offers on the award winning range of high quality dot matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and a very high quality of output. Our confidence in the quality of Citizen printers is such that we are pleased to offer a unique two year guarantee with every printer. Plus, if you purchase your Citizen printer from us, we will give you a Silica Printer Starter Kit (worth £29.95), *FREE OF CHARGE!*

FREE DELIVERY
Next Day - Anywhere in the UK mainland

FREE STARTER KIT
Worth £29.95 - With every Citizen printer from Silica.

FREE COLOUR KIT
Worth £39.95 - With Swift 9 and Swift 24 printers.

2 YEAR WARRANTY
Silica offer a 2 year warranty (including the printer head) with every Citizen printer purchased from Silica.

WINDOWS 3.0
Free Windows 3.0 driver - In the Silica Starter Kit.

FREE HELPLINE
Technical support helpline open during office hours.

MADE IN THE UK
Citizen printers are manufactured to high standards.

144 CPS DRAFT 9 PIN

CITIZEN 120D+

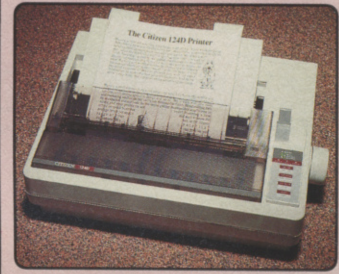
The Citizen 120D+ is one of the UK's best selling printers. It has a stylish appearance and excellent features and performance for such an inexpensive printer. The 120D+ is available with either a serial or parallel interface and is an ideal first printer.

- *9-pin Printhead*
- *Print Speed 144cps Draft*
- *30cps NLQ*
- *Epson & IBM Graphics Emulation*
- *Pull Tractor & Bottom Feed*
- *Superior Graphics - 240×216dpi*
- *FREE Starter Kit*

RRP	£233.83
STARTER KIT	£29.95
TOTAL RRP:	£263.78
SAVING:	£112.20
SILICA PRICE:	£151.58

£129
+VAT = £151.58

144 CPS DRAFT 24 PIN



CITIZEN 124D

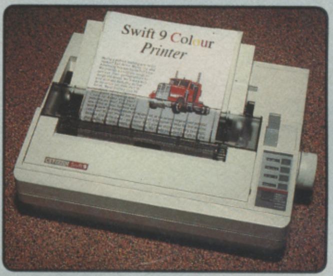
The award winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- *24-pin Impact Printer*
- *Print Speed 144cps Draft*
- *2 LQ Fonts (48cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *Superior Graphics - 360×360dpi*
- *FREE Starter Kit*

RRP	£292.58
STARTER KIT	£29.95
TOTAL RRP:	£322.53
SAVING:	£112.20
SILICA PRICE:	£210.33

£179
+VAT = £210.33

192 CPS DRAFT 9 PIN



SWIFT 9 - *COLOUR!*

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturer's 24-pin models.

FREE! COLOUR KIT

- *9-pin Impact Printer*
- *Print Speed 192cps Draft*
- *3 NLQ Fonts (48cps)*
- *8K Buffer*
- *Epson & IBM Graphics Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

RRP	£280.83
STARTER KIT	£29.95
COLOUR KIT	£44.65
TOTAL RRP:	£355.43
SAVING:	£133.35
SILICA PRICE:	£222.08

£189
+VAT = £222.08

192 CPS DRAFT 24 PIN

Swift 24 Colour Printer

SWIFT 24 - *COLOUR!*

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1990. Its rapid print speed, quality and black or colour options, make it a natural choice.

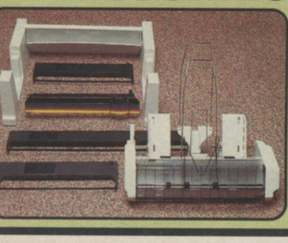
FREE! COLOUR KIT

- *24-pin Impact Printer*
- *Print Speed 192cps Draft*
- *4 NLQ Fonts (64cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

RRP	£428.88
STARTER KIT	£29.95
COLOUR KIT	£44.65
TOTAL RRP:	£503.48
SAVING:	£199.15
SILICA PRICE:	£304.33

£259
+VAT=£304.33

PRINTER ACCESSORIES



SHEET FEEDERS		
PRA 1200	**120D**	£71.38
PRA 1215	**124D/Swift 9/24**	£88.70
PRA 1228	**124D/Swift 9/24**	£42.00
SERIAL INTERFACES		
PRA 1189	**120D+**	£56.45
PRA 1209	**Swift 9/124D**	£32.25
PRA 1709	**Swift 24**	£26.38
PRINTER STAND		
PRA 1242	**124D/Swift 9/24**	£24.03
ORIGINAL RIBBONS		
RIB 3520	**120D/Swift 9 Black**	£4.11
RIB 3924	**124D/Swift 24 Black**	£4.70
RIB 3936	**Swift 9/24 Colour**	£15.63
COLOUR KITS		
PRA 1236	**Swift 9/24**	£39.65

All prices include VAT and Free delivery.

FREE! STARTER KIT

Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately, FREE OF CHARGE!

- *3½" Dual Format Disk with Amiga & ST Printer Drivers*
- *3½" Disk with Drivers for Microsoft Windows 3*
- *2 Metre Parallel Printer Cable*
- *200 Sheets of High Quality Continuous Paper*
- *200 Continuous Address Labels on Tractor Feed*
- *5 Continuous Envelopes on Tractor Feed*

If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref: KIT 5000) for the special Silica price of £24.95 - £5 off RRP!

NORMAL RRP
£29.95

200 PRINTER PACK

SILICA SYSTEMS OFFERS YOU

- *FREE OVERNIGHT COURIER DELIVERY:* On all hardware orders shipped in the UK.
- *TECHNICAL SUPPORT HELPLINE:* Team of PC technical experts at your service.
- *PRICE MATCH:* We normally match competitors on a "Same product - Same price" basis.
- *ESTABLISHED 12 YEARS:* Proven track record in professional computer sales.
- *£13M TURNOVER (with 60 staff):* Solid and reliable with maintained growth.
- *BUSINESS/EDUCATION/GOVERNMENT:* Volume discounts available for large orders.
- *SHOWROOMS:* Demonstration and training facilities at our London & Sidcup branches.
- *THE FULL STOCK RANGE:* All of your PC requirements from one supplier.
- *FREE CATALOGUES:* Will be mailed to you with offers and software/peripheral details.
- *PAYMENT:* By cash, cheque and all major credit cards.

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is one of the UKs leading independent computer dealers and provides a quality service to users at home, in education and in business throughout the nation. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature on the Citizen printer range and begin to experience the "Silica Systems Service".

SILICA SYSTEMS

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-309 1111**
Order Lines Open:	Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA		**Tel: 071-580 4000**
Opening Hours:	Mon-Sat 9.30am-6.00pm	No Late Night Opening	Fax No: 071-323 4737
LONDON SHOP:	Selfridges (1st Floor), Oxford Street, London, W1A 1AB		**Tel: 071-629 1234**
Opening Hours:	Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Extension: 3914
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-302 8811**
Opening Hours:	Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017

To: Silica Systems, Dept NCE 0891 - 55, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Mrs/Ms: .... Initials: .... Surname: ....

Address: ....

....

.... Postcode: ....

Tel (Home): .... Tel (Work): ....

Company Name (if applicable): ....

Which computer(s), if any, do you own? ....

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

WHAT'S NEW

The Express at-a-glance guide to the latest products flies the flag with a major world wide release of a UK designed laptop and much more...

• Save on those phone bills with the new super fast V32bis Maxam VII Plus modem

The need for modem speed

PRODUCT: V32bis modem
NAME: Maxam VII +
COMPATIBILITY: PC

The Maxam VII Plus V32bis modem from Racal-Milgo is aimed at the comms user with the need for speed.

V32bis is the latest international standard for dial modems and permits speeds up to 14,000 bits per second (bps). As such The Maxam VII Plus increases data throughput by up to 50 per cent over earlier V32 modems, and by up to a massive 600 per cent over V22bis modems, which could mean a massive saving on phone bills for anyone up- and downloading huge volumes of information.

However, if you still lust after even more speed then the Maxam VII Plus also includes the latest V42bis data compression standard. This allows for throughput of up to 35,000 bps which means you could send 100 A4 pages of text in just over a minute, according to Hampshire-based Racal-Milgo.

Other features of the modem include automatic adjustment of the transmission speed to obtain the clearest reception on noisy telephone lines and optional dial back and data encryption security measures. It is available in either tabletop or IBM PC/AT bus card versions.

Price: £999
Availability: Now
Target users: Businesses, sysops, other comms users handling large amounts of information
Contact: Racal-Milgo: 0256 763911
Perceived competition: Multidata V32, Miracom 9600

The pen is mightier

PRODUCT: Pen input computer
NAME: VPi386
COMPATIBILITY: PC

With the imminent release of major operating systems such as Pen Point and Windows for pens, the pen-input computer market is really beginning to hot up and among the first 386SX portable pen-input machines to be commercially launched will be the British-designed VPi386.

The VPi386 is a portable clipboard-shaped computer weighing just over four pounds. Beneath its 640x480, VGA, backlit Liquid Crystal Display (LCD) screen is a sensing grid which detects the movement of a specially designed stylus, thus enabling it to recognise handwriting. The screen can be used both landscape and portrait.

Fully IBM PC compatible, it has 2Mb of Flash memory and 4Mb RAM. External connection is possible through two serial and one parallel port. It will support MS-DOS, PenDOS, Windows for Pens and Penpoint. The company also claims that it is flexible enough to incorporate any new developments in pen input operating systems as they become available.

The hardware has been developed by the Macclesfield-based Eden Group Ltd, and was shown at computer shows earlier this year. At that time there were limited quantities available commercially, so Eden proudly boasts that the VPI386 was the first portable pen input 386SX to be launched in the world, beating even NCR's rival machine which has recently come on to the market.

However, Eden, being primarily a developer, did not have the structure to manufacture on a wide scale, so it has signed a deal with leading Korean computer manufacturer TriGem, which will now build and distribute the machine worldwide under its own name.

Its official releases will be at the Comdex Fall in the USA and Systems in Munich for Europe, and Eden will be holding a series of regional roadshows in the UK to show off the machine shortly afterwards, though dates have yet to be announced.

• British-designed, the VPi386 in a rapid entry into the hotting up pen-input computer market

Price: Not yet set, but expected to be around £2,500
Availability: October
Target users: Primarily business with people out in the feild such as salesmmen
Contact: Eden Group Limited: 0625 576050
Perceived Competition: NCR 3125.

Fast cache

PRODUCT: 386SX
NAME: CompuSys 320SX Cache
COMPATIBILITY: PC

CompuSys reckons that its latest launch is one of the fastest 386SX machines on the market.

The 320SX Cache runs at 20MHz and has 32Kb of cache memory for high speed number crunching. It comes with 2Mb of RAM, expandable to 16Mb, a 40Mb hard disk and super VGA colour graphics.

Featuring six expansion slots, two serial ports and one parallel port, the British built 320SX Cache is supplied with an MS-compatible mouse and MS-DOS.

Price: £1119
Availability: Now
Target users: Small and medium businesses
Contact: CompuSys: 0296 395531
Perceived competition: AST Bravo, ALR Powerflex, CCS CC316SX, Digitask Axiom.

TV Windows

PRODUCT: PC TV Tuner
NAME: Screen Machine TV Tuner
COMPATIBILITY: PC, Mac

With Magnifeye's Screen Machine TV Tuner you can watch television on your Mac or PC monitor without having to quit out of your word processor.

The TV Tuner is a small hardware device which in itself is a powerful teletext adaptor which enables you to display and capture Teletext pages on your computer. However, when used in conjunction with Magnifeye's Screen Machine video overlay board, it allows you watch television in a window of any size and position on your monitor.

The Screen Machine on its own enables video signals to be displayed in a window, but it has no internal tuner so can accept signals from video recorders, video cameras etc. The TV Tuner gets around this problem and enables your computer to display signals received directly from a television aerial or cable.

All television standards are accepted (PAL, NSTC and SECAM) and frequencies can be adjusted from within the supplied software. The Tuner includes an analogue pre-amplifier with three stereo inputs and two stereo outputs which can be connected to any kind of speaker. You can then control the volume from your Mac or PC.

Price: Screen Machine:
Mac: £1,498
PC: £1,123
TV Tuner: Around £250
Availability: Screen Machine: Now
TV Tuner: October
Target users: Advertising agencies, publishers, designers.
Contact: Magnifeye: 071-221 8024
Perceived competition: See lead news story on page seven.

Low cost colour

PRODUCT: Budget 286 PC
NAME: SBC 1220-40K
COMPATIBILITY: PC

Colour PCs are no longer exclusive to large, multi-million pound turnover businesses.

The SBC 1220-40K from The Computer Alliance offers full colour VGA graphics and a hefty 40Mb hard disk at a price which should not incur the wrath of your bank manager.

• The SBC 1220-40K – Colour VGA graphics at a budget price

At £699, this 286 machine has a processor speed of 12.5MHz with a selectable option of 6.25MHz. It comes with 1Mb of RAM expandable to 4Mb, a 14-inch colour VGA monitor with a resolution of 640x480 and parallel, serial and mouse ports.

Software includes MS-DOS 4.01 and DOS shell, start-up, diagnostic and VGA utility programs.

Price: £699
Availability: Now
Target users: Education sector, small businesses
Contact: The Computer Alliance: 0305 761861.
Perceived competition: The only 286 in this price range to offer colour VGA, but mono 286s in same price bracket include Akhter 286LC, CompuSys Prostart, DAN Technology COM4. ■

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Trivial Pursuit - *By Domark*	£19.95
ART PACKAGE - £89.95:	
Photon Paint 2.0 - *By MicroIllusions*	£89.95
TOTAL RRP:	£319.73

FREE! WORTH NEARLY: **£320**

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EXPRESS MAIL

From fraud and pirating to pornography and sensationalism, Haydn Fitz-Williams puts these pages in your hands and gives you the chance to let it rip! He also would like to hear what you think of *Express*

Boss frauds

Interesting piece about computer fraud last week. Particularly the findings that over half of senior managers who use microcomputers at work illegally copy software. Just goes to show it's not just spotty kids in bedrooms who are the real pirates eh?. I bet the amount of money lost in business software is twice that of games titles.

What got me though was despite all the security procedures companies employ, most of the other types of misuse, eg, hacking, viruses and fraud, are detected by tip-offs from outsiders and the actual abusers themselves confessing. Maybe, security isn't considered important enough. Hardly any wonder when it's the senior managers themselves who are the worst offenders!

John Grantham, Exeter

I GUESS you're right there John, though I suspect managers just assume that if they buy some software for their company they are entitled to use it on all their machines. It's a 'misunderstanding' that's covered by site licences – but I don't think the take-up of these is really very high.

Easy answer

ONE OF HAYDN'S WINNERS £5

I recently attended the Boston MacWorld Show *(it's alright for some – HFW)* and it seems that Apple is going to start cracking down on illegal copying as its developers are claiming that it's costing them nearly $6 million a year in lost revenue!

The Americans are strongly against any form of copy protection, so much so that they won't buy products if they are protected, so other methods are being looked at. The one which looks as though it could be adopted is known as 'stalling'. This involves burying some code in every master disk which, if copied, causes the copy to run more slowly each time. Therefore an illegal version will get slower and slower until it's unusable.

Also, they're considering another preventative which will cause a machine to take ages to actually boot up first thing in the morning. Though I guess both forms can still be overcome by the determined cracker, at least it will deter the casual copier.

I wonder whether there are any other readers out there who have novel ideas of cutting down on copying? Perhaps someone might like to apply some lateral thinking to the problem.

Andy Radford, Nottingham

YES ANDY, I think the 'stalling' technique would probably be sufficient to deter the kind of copying referred to in the first letter. And yes, I think that maybe we should start a competition for new and original forms of copy prevention. Thanks for that suggestion.

So, if any readers would like to win, oh let's be generous about this, not just a fiver but **a whole tenner**, then send 'em in to: **'Crack This', NCE, 30, Monmouth Street, Bath, BA1 2BW.**

Sick or What?

The editor MUST have been on holiday for issue 142. No other issue has been so sensationalistic. Please note that I refer to several snippets/articles, not just the PD one.

By the way, why do people think that PD is only for PC, ST or Amiga users? I have noticed many so called PD libraries don't quote in their adverts which machines they cover.

Neil Morgan via Aspects

AND INDEED you are correct – while the cat is away, etc, etc. But I don't think the article was unduly sensationalistic – maybe the cover was but that's what it's supposed to be isn't it? Good point about PD though – perhaps advertisers should begin letting potential customers know if they specialise in 8-bit wares too

Well said!

To further fuel the debate over the PD/BBS article in issue 142 I would like to point out a very nicely presented disk on the Public Domain that I recently came across entitled *Smooth Criminal*. Lots of interesting files on subjects ranging from ripping off supermarkets to how to electrocute, blow up and generally maim your least favourite people. These disks DO exist, they AREN'T hidden text files and after I realised that these ideas on the disk actually work I began to see the concern people feel.

This seems to be more of a threat than porn. (Any kid can watch soft porn and "Boobs" on Channel 4 at night). Apart from that it was a good read and it was obviously meant to be!

By the way I LIKE sensationalist headlines and stories. The point here is *Express* only really skimmed the surface of the subject and there was a lot more there with a little investigation.

Stuart Spilsbury via Aspects

THANKS FOR THAT Stuart, perhaps you'd like to help us with some facts as we're intending to do a follow up.

I've seen the bomb-making text files as well and I can't really see any justification for them on any level. Again though, I have to stress this is just a minority who are giving PD and bulletin boards a bad name. But the quicker they are rooted out and exposed the better.

As for your comments on porn, well the kind of stuff you get on Channel Four doesn't come anywhere near some of the material on offer. Some people would argue there's no such thing as soft porn in any case. It's all part of the same equation.

Dirty ads

Well threats are flying thick and fast over your article on pornography, BBS's and PD libraries, you certainly stirred things up.

However I would have thought my last letter to you, at least merited a reply even if just via Aspects.

OK you have drawn everyone's attention to the problem, now why not help stamp out the problem by REFUSING to

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Return to: ***NCE*, Issue 146 Survey, Future Publishing, Freepost, Bath, Avon BA1 2XF.**

ON THE COUCH

This week, resident *Express* psychiatrist Dr Clare Anthony lays PETER M of BURNHAM ON CROUCH (across her leather couch for a spot of frenzied analysis). Peter works for Probe Marketing which is based at Probe House, so you can imagine the good doctor thought this particular session quite appropriate.

And you could be next! Just send in the name of the machine you own, your favourite software and the machine you'd most like to own to: Leather Couch Clare, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

OK Peter, let's get down to some in depth probing shall we? Here, just bite on this pillow and relax...

- MACHINE OWNED:
  Olivetti M21 Portable
- FAVOURITE SOFTWARE:
  Olivetti DOS v3.3A
- DESIRED MACHINE:
  A working Olivetti M21

You poor, poor boy. You're obviously Olivetti mad!! It seems to me that the problem stems initially from your surname – it's a little, how shall I put this, truncated. In fact it's probably because the M stands for Minimal isn't it Peter? Yes I thought so. Now to your fascination with Olivetti. It's all to do with your adolescent fixation with Sophia Loren of course. You have subconsciously transposed a furtive desire for the soft curves of Ms. Loren's unequalled hardware on to a rather primitive electronic box with vague formal references to the abstract linear strictures of Italian interior design.

And this is very worrying. Not least because the software you employ to blank out a constant unconscious vision of Ms. Loren's undoubted architectural merits, is not up to the job. To make up for this, you have destroyed the Olivetti beyond repair. Yes I'm afraid we're talking tantrum with a capital 'T' here.

You've thought of Sophia, desired Sophia, been denied Sophia, and taken out a lack of Sophia on your poor old machine. It's no use blaming the hardware. No you should really be focusing on your frustrated oedipal desire for some advanced Italian cleavage.

PROGNOSIS: Buy a hammer and smash the Olivetti to pieces while looking at a picture of Brigitte Nielsen. You will shortly realise that Ms. Nielsen possesses far greater formal qualities than Sophia Loren and what's more they're silicon-based too. Then buy a NeXT. You can then have a picture of both women on screen at all times for extensive comparative testing.

take advertisements from companies that offer this material in their catalogues. If it's a case of financial loss that you're worried about through reduced advertising revenue then I think it's a poor excuse, along with Sysops saying that having material on a BBS attracts users. So come on, the majority [as you said in the article] of BBs and PD companies are beyond reproach...but what about you?

Can you honestly say that the catalogues you receive from the PD companies do not have "ADULT AREAS". Apologies to the rest of the readers for bringing this subject up again but I feel *Express* has its part to play.

Gary, Software Madness BBS

ALL I CAN say on this score is that we have refused to run ads on a number of occasions where 'adult material' has been advertised. Since we ran the article we have further tried to tighten up this situation precisely because we don't want to unwittingly encourage it. But you have to appreciate it's a difficult area for us to police because we don't necessarily receive catalogues from all PD libraries and we don't log on to all bulletin boards. But point taken all the same. We are on our guard.

Closed door?

Remember the *Door to Door* scam?"Was anyone prosecuted? Did *Express* get its advertisement fees? Did any of the suckers (I find myself as one) get their money back? I ask these questions as it was suggested by the Trading Standards Office that if I wished to pursue the matter then I should do it privately! Have they no teeth?

John Murray,Glasgow

WE'RE CURRENTLY in the middle of a legal tussle with Geographic, the publishers of the awful *Door to Door*, so we can't say a great deal. But as soon as the wheels of justice come to a halt we'll be the first to tell you if, when and how you can get your money back.

Sam problems?

If you print this DON'T send me the money. *(what money? – HFW)* Send it to Great Ormond Street Children's Hospital.

How can Domark Claim that its last six releases for the Spectrum are Sam Coupé compatible? It put a little sticker on saying so..but they are not!

I have tried, many times, to get these (particularly the latest two) to load and run but with little or no success. THIS INCLUDES ATTEMPTS WITH LERM'S TAPE! The messenger may overcome these problems but, for the casual user, it is an expensive item.

If Domark wants to claim this is so then it had better substantiate this claim. I HAVE tried to contact Domark but to no avail. So could you find out just exactly what it means by the words "SAM COUPÉ COMPATIBLE"?

Even OCEAN games load, though it takes a bit of careful adjustment of volume, selecting the correct patch, etc., BUT THEY DO LOAD and in many cases run as well.

In the meantime I would like to ask any reader out there who has had the same problems to do what I'm going to do. And that is to report DOMARK to the TRADING STANDARDS office.

Malcolm Wright, Co. Durham

STEADY ON there a mo Malcolm. I contacted Domark's technical department and they assure me the games with the Sam stickers are compatible. If you have a disk version all you have to do is press F9 on the keyboard while it's loading and if its a tape then you need to run the emulator.

Unfortunately, though, they can't iron out any problems since they've had a number of burglaries recently and their Sam gear has been nicked! But why not give them a call anyway on 081 780 2222 – I'm sure they'll help you out.

That debate

I've decided that the old piracy debate needs stiring up again. I was reading David Pitcher's letter to Tech Tips (*Express* 144) and noticed that his explanation of piracy was the only one that I have ever agreed with.

It is the idea of getting something for nothing that makes people pirate games. I have seen pirate versions of software like *Disney Animation Studio* going for about 20p. Why pay £100 for it when you can get it for 20p?

There are even budget games (£2.99) on the "black market". It must be part of human nature. Theft it may be, but if someone can buy a game for 20p they must be stupid if they buy it for £30!

Piracy cannot be stopped by any other way than beating the prices of the pirates. Since this is impossible, piracy is just a thing that we have to put up with.

Duncan Farnworth, Bolton

LIKE WE HAVE to put up with burglars and 'stuff that falls off the back of lorries and appears in pubs' I suppose. But just as there'll always be people like that out there, there'll always be people determined to catch 'em. Pirates just have to put with that.

What a head

Just what is it that Stuart Campbell is wearing on his head each week in your games pages?

Tim Spence, Wigan

THAT TIM, I'm reliably informed, is his hair. Personally though I reckon it's protective head gear just in case any companies get a little angry about his forthright and honest opinions. Not since the days when Rik Haynes and Fielding Mellish used to award gravestones to some releases have we had anyone so fierce and fearless at the games helm.

MCIBTYC

To add some fuel to the My Computer Is Better Than Your Computer debate (sorry, I couldn't resist it). I will describe a computer. It has 4 channel mono sound, an 8-Bit MPU, has 64K, and amazing graphics (256 Colours). It is about 8 years old, and cost me £20, yet the demos I have received are better than an Amiga. But wait, you still don't know the name!

It is an Atari 800XL. Programmers will know of a few similarities between that and our flexible commie friend. The custom chips work in much the same way, and the Atari has a HAM-type mode. Of course, there is a link. The people who made my Atari also made the Amiga (the natural progression from the XL/XE).

I won't be upgrading to the Amiga until the CDTV-Photo CD business is sorted out. But users of the 8-Bit should not make fun of the Amiga (or vice-versa), since the machines are equally matched. If Atari was to make a 16-bit that could amaze in the same way as the XL, then I would be impressed.

Richard Kilpatrick, Kelso

EXCUSE ME but are we talking about the same Atari XL/XLE here? There may well be some truth in what you say about the Amiga being the rightful decendant of the XL and not the ST – but have you seen some of the demos for the Amiga? I don't think there's any way you could run anything like them on an XL. ■

Write Now

Write and tell Haydn Fitz-Williams what you think! Reach him at: Express Mail, 30 Monmouth Street, Bath BA1 2BW. Sorry, no personal replies, even with an SAE and remember, only SOME letters win a fiver

On-line mail

Own a modem? Then squirt us a letter. *Express* has its own area on Aspects bulletin board (061 792 0260) where you can leave mail and upload/download files.

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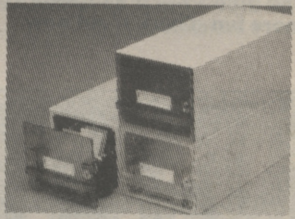

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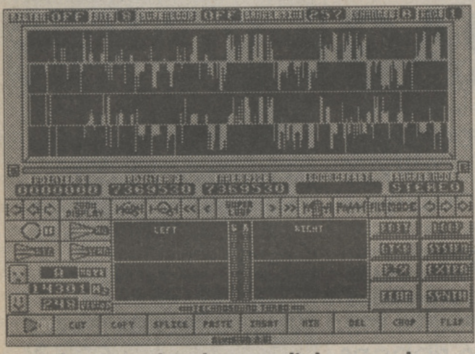
AMIGA

- **Get the lowdown on *TechnoSound Turbo***
- **How to run those NSTC programs on a PAL screen**
- **Become an instant champion at the latest games**

TURBO TECHNO

Regular *Express* readers might remember that I promised you all a review of New Dimensions' ***TechnoSound Turbo*** sampler for last week's issue. Well, I didn't quite get the chance last week, so I thought I'd hold it over to this week. And sure enough, here it is.



• *TechnoSound Turbo* costs little more than a full priced game, but it'll provide you with hours more fun. Check it out now

TechnoSound has been available for a while now, but it has recently been upgraded substantially with the arrival of a new software release that pushes the capabilities of this already excellent sampler still further. The sampling hardware itself has remained unchanged, but the software is a totally different beast altogether.

Like all samplers (well, 99 per cent anyway), ***TechnoSound*** connects to the Amiga via the parallel port, so I'm afraid it's time to unplug your printers. It would have been nice to have seen some form of a printer pass- thru which would have allowed the unit to be left plugged in permanently, but New Dimensions obviously didn't think of this. Oh well, I suppose nothing is perfect.

Unlike most budget samplers, ***TechnoSound*** offers full stereo sampling via two phono connectors on the end of the unit. You can feed in a sound signal from just about any device, ranging from CD players (which definitely gives the best results), personal stereos and even microphones (for real life samples). Don't plug in an amplified signal as this will blow the sampler into little pieces.

The ***TechnoSound*** software is pretty impressive. It has the usual selection of sample editing tools, but it doesn't really come into its own until you start playing with its fun sound processing effects. Simply by feeding a sound source into ***TechnoSound***, the software will apply any one of a number of digital effects to the incoming signal in realtime and then pass it straight through to the Amiga's sound output.

These effects range from the usual echo and reverb to some quite strange effects like 'Exterminator' and 'Legless'. They sound pretty good with pre-recorded music, but you really do need a microphone to obtain the best (and funniest) results.

The overall sound quality is surprisingly good. It's definitely on par with MicroDeal's excellent ***Master Sound***. In fact, I'd probably say that it's slightly better.

In all, ***TechnoSound*** is a great little sampling package that is well worth its £35 price tag. Even if you're not that interested in sound sampling, I strongly advise you to check out ***TechnoSound***. Who knows, you too could catch the sampling bug.

☎ Find out more by phoning New Dimensions on 0291 690933.

ITS ALL IN THE LINES

Incompatibility problems between NTSC and PAL Amigas is very much a thing of the past these days, but the odd program still pops up that doesn't take full advantage of the extra 56 (or 112 lines in interlace mode) lines offered by PAL Amigas. Games are the obvious culprits, but even some applications software packages are still written with little thought for PAL users.

The Public Domain is full of utilities that still don't run properly on a PAL Amiga. Even well known utilities like Tim Martin's absolutely brilliant SID directory utility aren't written to take advantage of that bit of extra space with which PAL Amiga owners are blessed. SID will open to full PAL resolution when run on the Workbench screen, but not when it is opened in its own custom screen.

If you're feeling a tad adventurous, then it's actually possible to directly modify the code of the utility in question so that it opens its screen to the full PAL length. I've successfully managed to do this on a number of utilities including both SID and even Electronic Arts' ***Deluxe Music***.

Here's how it's done:

What you need is a binary file editor like ***NewZap***, ***Zap*** or ***FileMaster***. All you have to do is to load the program in question into one of these editors and

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AMIGA GAMES BUSTINGS!

Fancy getting the better of that Amiga game that has been bugging you for weeks? Well, check out these handy game hints sent in by *Express* readers and you can!

Shadow Dancer – Fancy infinite lives? If so, then pause the game and type 'GIVE ME INFINITIES' (don't forget the spaces). Your Ninja will now come back from the dead more times than Elvis.

Toki – It's only just been released, but already some clever dick has found the cheat mode. To obtain infinite lives, start the game and then type 'KILLER'. As an added bonus, you'll also be able to skip levels by pressing F1 through to F8.

Nightbreed – For infinite lives (again) in the Ocean adaptation of Clive Barker's brilliant *Nightbreed*, type 'RISEN FROM THE DEAD' while the game is playing.

then search for the hex string for the window and screen definitions.

Intuition (the Amiga's windowing environment) holds its window and screen definitions in a preset structure that is simple enough to search out. To change a screen (or window) that opens out to just 200 pixels, all you have to do is to search for the hex value 00C8.

To make this more reliable, add the hex value for the screen (or window) width to the front of this string. For a 640x200 screen, the hex value you need to look for is 028000C8. ***FileMaster*** has a hex search function which makes things easy. Once it's found this hex string, change the last three digits to 100. The full string should now read 02800100. Then just save the program out.

When you run the program, it should now open out to full PAL resolution. Note that this doesn't always work, so never directly modify your only copy of a program, especially master disks. If you can, back up the disk first and then work on the back-up.

There's no way I can guarantee that this tip will work on all programs, but it's worth a try nonetheless.

A final note on SID. To make the program work properly with the new screen, you have to make several changes to the program's 'config' file (this is held in the S: directory under the name SID.config). For starters, the flag 'WINDOWTYPE' must be changed to 'SPECIFY' and 'SPECIFYROWS' must be changed to '20'. Oh, and 'SCREENTYPE' must be set to 'CUSTOM'.

NEXT WEEK

Stay tuned for the low down on ***Audition 4*** from SunRize Industries. Badged as the sample editor that 'carries on where ***AudioMaster 3*** left off', ***Audition 4*** certainly has its work cut out for it if it is to live up to this brave claim.

Jason Holborn

ST

- **What's Atari got up its sleeve for Dusseldorf?**
- **Making upgrades easy, the Xtra-RAM Deluxe**
- **Sneak preview of the next stage in golf sims**

SCAN THE HEADLINES

Golden Image, purveyor of quality scanning hardware, has announced its Mark II hand scanner. The improvements to this popular scanning package have been made to the software rather than the hardware and the company is offering an upgrade at a cost of £15 to existing owners.

The main improvement to the software comes in the form of its ability to save an image as a grey scale. The advantages of this kind of screen save over dithered ones become apparent after printing out your document – dithered patterns produce an impression of grey using patterns of dots which become distorted if you try to print out the scan larger or smaller. Grey scale images can be reduced or enlarged without any problems because when they are printed out they are converted back to halftones which means that a constant shade is achieved.

Other improvements include:

- 16 level true greyscale IMG and IFF files.
- 31 apparent level greyscale IMG and IFF files.
- 32 true level greyscale TIFF files.
- The ability to run the scanner from within other programs (such as ***Calamus***).
- An almost instant zoom full feature to enable quick scans and saves which don't require editing.

Golden Image is at Fairways Business Park, Lammas Road, London E10 7QT.
☎ 081-518 7373.

PAINLESS UPGRADES

Upgrading your ST's memory is a bewildering task at the best of times. There are so many kits out there, each with its own wonderful selling points and '*Low, Low!!* price. The reality is that you can end up with a duff board which offers no room for further upwards expansion, and I'm speaking from hard-earned experience here!

Frontier Software seems to have taken on board the idea that you lot with

Continued on next page ➤

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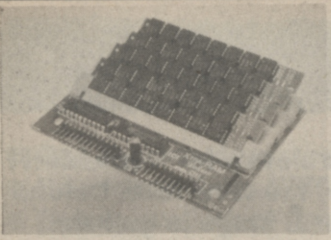

• Frontier Software has used SIMMS in its RAM cards to make upgrading less of a chore

◀ STFMs will want to update your computer one day, possibly to an STE. To this end, its brand new range of RAM upgrades consists of SIMMs (Single In-Line Memory boards).

These natty units (which are becoming something of an industry standard) have already been implemented in the STE. They are preferable to other forms of RAM board, because replacing them is so simple – you just pull them out of their slots and plug in a board with a greater capacity.

Frontier believes that by offering SIMM upgrade boards to owners of standard STFMs, people are more likely to see the RAM as a long-term purchase which can be moved from computer to computer. Thus Frontiers' Xtra-RAM Deluxe comes in 1-, 2-, 2.5- and 4Mb versions.

The installation of RAM upgrades is always going to be a tricky process, but Frontier has eased the problems by producing a comprehensive manual which account for all different flavours of ST. It certainly makes a change to see this kind of professional attitude after years of black and white photo-copied pamphlets with biro-drawn diagrams.

If you already own some SIMM boards, Frontier can supply you with an un-populated unit for £39.99. The 0.5Mb version costs £69.99, the 2Mb version costs £119.99 and the 4Mb flavour costs £199.99.

Frontier can be found at at PO Box 113, Harrogate, North Yorkshire, England, HG2 0BE.

☎ 0423 567140.

MICROPROSE TEES OFF

Dear me, they're not idle for long, those chaps and chapettes at Microprose. No sooner have they announced their *Grand Prix* simulator, than they bring round some extremely tasty looking preview copies of a golf simulator.

As usual, the company's amazing attention to detail is all too evident. Imagine if you will, all the different varieties of the golf game there are. You'll find all of them as an option in this game; singles, skins, tournament, medals, they're all in here.

When you've chosen which game you'd like to play you can choose a course. Again you've got a decent choice, the preview version came with 12 authentically recreated courses, ranging from St Andrews to St Augustine. Pick a course and against whom you'd like to play (human or computer) and the game cuts into the actual simulation section.

At the start of each hole, an overview of the course enables you to project exactly how far each club will send the ball by means of a white ball projection line travels up the fairway.

When you're completely happy with your choice of club, the screen changes to a view behind your golfer as he lines up for his shot.

It's possible to be extremely accurate with your shots. You can change your stance simply by clicking on the feet icon to move your feet to the required position. If you'd like the ball a bit higher on the tee, click on the tee icon to raise or lower it accordingly. When you're happy that your golfer's standing correctly you can play the shot.

Microprose has plumped for a clock-like swing display. This makes it possible to hit the ball with just the right amount of strength, slice or hook to get that infuriating white dimply object flying off in the right direction. A tasty bit of animation shows your golfer whacking the ball and then some *really* superb animation takes over as a camera follows the ball down the fairway.

Like everything else in the game, the camera's position can be changed. For example, you can have it simply follow the ball through the air, or have it start off behind it and then move smoothly round until it's in front of it watching the ball land on the grass.

Microprose's Golf is a real joy to play. You can expect to see it in the shops within the next month.

Andy Hutchinson

The UK's biggest and best magazine for the Atari ST, ST Format, is currently looking for a news editor. Turn to page 48 for more details.

DUSSELDORF PREVIEW

The Dusseldorf Atari show has traditionally been the event at which the company chooses to launch its new machines. On the surface it would appear this year's event will be no different. We all know that Atari has some wonderful new technology to show off. The question is, however, will it be ready to show?

My sources within Atari assure me that the main launch on the Atari stand will be software related, though quite what this means, I'm not sure.

No doubt the company will be showing a new version of the ever-changing TOS. Who knows, we might even see a TOS which does the job it was designed to do, rather than what the in-built bugs dictate.

Yours truly will be at the Dusseldorf show, mixing it up with the assembled band of devil-may-care Atari staff. So if you want to know what went down at the show, keep reading this column.

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PC

- ***PC Tools 7.0* fights the bug war**
- ***Norton 6.0* fights the, erm, bug war**
- **DBase users fear Borland software surgeons**

MISSED THE POINT

Oh dear. Central Point is in a right tizzy. The latest version of its popular utilities package PC Tools 7.0 collides with DOS memory managers, is not compatible with Digital DR DOS 5.0, and, in isolated cases, causes disk crashes.

Michael Brown, the main man from the Beaverton, Oregon-based company, admitted to users over CompuServe that Centrepoint may have rushed PC Tools 7.0 to market. According to Brown, there are two major causes of data loss: conflicts with a compression utility, PKLite, from PK Ware, and problems in loading and unloading VGA fonts.

However, there is a new version of the PK Lite on the way that should solve the most damaging bugs. Version 1.12 of PK Lite will be included in an upcoming maintenance release of PC Tools 7.0.

No release dates have been announced yet because, as Brown commented, "When you are getting a lot of bug reports, the last thing you want to do is slap something together, send out a million of them, and hope it works."

Pity he didn't think of that before he originally released PC Tools V7.0!

DBASE WORRIES

It's a worrying time for dBase users everywhere. Especially when they hear news that Borland's acquisition of Ashton-Tate means that future dBase compatible products will be less `compatible'.

While products such as *FoxPro 2.0* can recompile dBase IV source code, it is unclear if they will evolve to clone the event-handling capabilities of *Object dBase*, Borland's new dBase version.

As all software acquires object-oriented behaviour, a different kind of compatibility may emerge, one that emphasises linking of objects at compilation time.

"Borland may have finally bitten off something that may be hard for it to digest," said Surinder Brar, vice president of marketing and sales at WordTech Systems in California.

"Borland will discover [that] most of dBase IV and III Plus is undocumented and based on the behaviour of the product," said Adam Green, a Boston-based X-Base consultant."Now Borland will have to be compatible with all the little weirdnesses."

Borland may replace unpopular or troublesome features of dBase IV, such as transaction processing commands which users claim has never worked correctly, and discard dBase IV's implementation of SQL and its template language, which most users have avoided anyway.

☎ Contact Borland on 0800 378880.

NORTON IN PICKLE

It appears to be a bad time for utility packages everywhere. First ***PC Tools 7.0*** hits problems and now several bugs, including some causing disk damage, have been found in ***Norton Utilities 6.0***.

Users have been reporting the bugs for several weeks to Norton's technical support department over CompuServe.

Bugged programs include ***Calibrate***,

Continued on next page ➤

SHAREWARE RETURNS: TEXT ADVENTURES

Aye, the shareware section returns – a week late, sorry!

A new specialist subject begins this week, the imaginative world of text adventures. There are five varied examples for your delectation.

The first two actually arrive on the same disk (2651), via the same author. *Jacaranda Jim 2.23* is a classic among shareware users the world over. Containing such loopy concepts as 'homicidal beechwood chairs', Jacaranda Jim is totally and thoroughly recommended to aficionados.

***Humbug*, the second game on the disk, is just as daft, just as much fun and as highly recommended.**

***T-Zero* (disk 2588) is a massive game, that arrives from the USA in a compressed file. Telling a tale of time travel that dabbles in SF and fantasy this game is another little cracker.**

***Beyond the Titanic* (disk 0800) finds you on the deck of the infamous eponymous ship during her maiden voyage. Your goal is to survive and return home. Tough but very enjoyable.**

Finally *MUG 3.2* (2224) gives you the feel of the popular multi-user games and can be played as a stand-alone game or as a Multi User Game (MUG) hitched up to a bulletin board. Features 50 mobiles.

If any of these disks interest you then contact PD & Shareware Library, Winscombe House, Beacon Road., Crowborough, E Sussex TN6 1UL.

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which should perform a non-destructive, low-level format of hard drives, but is unable to work beyond drive cylinder 1,024.

Also, users who have tried to run the Speed Disk defragmenter with the DOS utility FastOpen loaded report have found that the FAT and boot sectors of their hard drives have been destroyed.

Now the Norton Technical Support officials say that FastOpen must be removed when using SpeedDisk or any other disk defragmenter.

A maintenance upgrade that addresses some of the bugs is in the works, a company official said, and is expected to ship soon.

☎ Symantec is on 0628 777677.

BORLAND ON CHEAP

Borland is developing home versions of ***Paradox*** and ***Quattro Pro***. They will not have all the features and functionality of the higher end versions of ***Quattro Pro*** and ***Paradox***, Borland said. Pricing was not disclosed.

Paul Rigby

DOS CORNER

Having problems with Novell 3.1 and DOS 5? Apparently some of you have found the `command.com` refuses to work, giving an invalid `command.com` error.

The solution? Try to alter or remove the `SHELL=` command. If you decide to keep it, try the following:

```
SHELL=C:\DOS\COMMAND.COM /p
```

SPECTRUM

- ***Music Writer* extends its boundaries**
- **Serious reading – *Sinclair & Sam Computing***
- **Shoot your TV in safety – lightgun returns**

MUSICAL EXTENSION

The foremost Speccy music utility, Gary Rowland's excellent ***Music Writer*** is due for a bit of an extension.

One problem with ***Music Writer*** was the way any musical masterpieces created with it couldn't be played back outside the program. The release of ***MW Play*** should change that, though. This will basically allow you to incorporate ***Music Writer***-created ditties in your own programs or simply just play them back without the main package, much to delight of your friends and family no doubt.

Contact G Rowland at PO Box 49, Dagenham. RM9 5NY.

RETURN A FAVOUR

My old friend Mark Harris (nee Miktor) has just written to ask a favour from some kind person, and also to recommend a good read.

Firstly, the favour, which involves a DMP 3160 printer Mark recently purchased to improve the legibility of his letters. The only trouble is it came minus the manual and he's having problems getting the thing to perform to the best of its ability. So if you have a manual for said printer or any information to divulge I'm sure Mark would be interested. Send everything to me and I'll heave anything relevant on to him. After all the hacks and tips he's given us over the years it's the least we can do.

TOP TAPZINE

And now a raving recommendation for *ETM* tape mag:

'The other week I received a full set of *ETM* and I have say it's a bit good... so good, in fact, that I decided to take out a six issue subscription.

'That might not seem a big thing to you but when you consider that I've been reading Speccy mags since I got my first ZX81 (showing my age a bit there – the ZX81 still works by the way) and up till now I've *never* trusted anybody to not sod off with my dosh before I received the goods!

'Also I noticed that YOU used to write a fanzine. Is it still going?'

Thanks for writing Mark. I am a great fan of *ETM* myself, and reckon it has a very high standard of reviews. As regards *Spectacular*, the really quite brilliant fanzine I used to write for absolutely free of charge, I'm afraid it's long since dead and probably smells pretty bad by now. Put out a Wanted ad for those limited collector's item back issues today!

SERIOUSLY GOOD

One way and another Garner Designs has received a few column acres of late as I've printed various readers' complaints. Last week's letter from Daniel Garner seemed to clear things up and now I can safely tell you about *Sinclair & SAM Computing*, a new subscription only mag for Spectrum, SAM and even QL users published every month by Garner.

Despite being pretty new, the issue I saw (number two) was throbbing with good stuff and ran to an impressively hefty 46 A4 sized pages. And it doesn't concentrate on joystick waggling either. Articles on video titling and programming in C were original and informative and coupled with regular columns devoted to public domain, emulation and Comms.

There's also a stack of serious software reviews and some up to the minute (when the mag was printed anyway) news and comment.

The whole thing's well laid out and professional-looking. If you're looking for a publication devoted to the more serious side of the Speccy and SAM you'll doubtless be impressed. Subscriptions cost £9 for six issues or

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RATATATTAT!!!

You can shoot at your TV Clint Eastwood style without blowing the thing up with the aid of your Speccy and a light gun.

One game ideally suited to the shooting format is Ocean's hectic machine gun frenzy, ***Operation Wolf***. And not entirely coincidentally, here is a hack for the light gun version of the game, sent in by our old pal, Alan Johns.

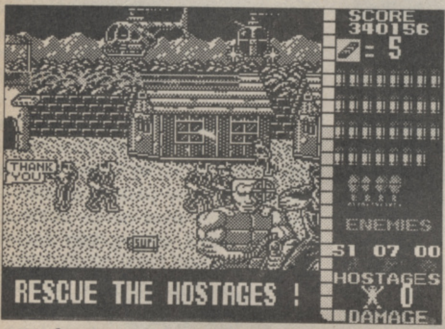
It eliminates the problem of enemy fire, thereby allowing you to pick off the baddies at your leisure. To get it working simply type it out, SAVE for future use, RUN and start your tape from the beginning. Thanks Alan.

```
10 REM OPERATION WOLF
(LIGHTGUN)
20 REM WRITTEN BY ALAN JOHNS
(FOZ)
30 LOAD "NOCAHACE.NED" CODE
28672: LET X=USR 28672
40 LOAD "WPAGE" CODE 28000
45 LET A=0+16: GO SUB 1000
50 LET A=1+16: GO SUB 1000
60 LET A=3+16: GO SUB 1000
70 LET A=4+16: GO SUB 1000
80 LET A=6+16: GO SUB 1000
90 LOAD "WCMAIN" CODE 25391
100 LOAD "WS2" CODE 16384
105 POKE 40896,0: REM NO
ENEMY FIRE: REM CAN ALSO BE
USED AS A MULTIFACE POKE
110 RANDOMIZE USR 34712
120 LOAD "WC"+STR$ (A-160
CODE 30000
130 POKE 28003,A
140 LET X=USR 28000
150 RETURN
```

If you fancy the chance to be let lose with with a light gun contact Trojan Products, Unit 7, Dafen Park, Llanelli, Dyfed. SA14 8LX for details of its ***Lost In Space***-inspired Magnum (now relaunched as the Phazer) or Cheetah on 0222 887777.

And carry on sending in those cheats and pokes! Be seeing you...

Robin Alway



• Make your enemies harmless by leaving them armless using our hack for the light gun version of *Operation Wolf*

C64

- **The GS is a flop, and that's official!**
- **Amazing utilities available in Public Domain**
- **Zeppelin's amazing budget pool sim**

FRANKLY SPEAKING

As reported in *Express* 143, Commodore's UK managing director Steve Franklin has 'officially' announced that the C64GS was a disaster.

Not before time, but it's nice to see accompany talking openly about its failures for a change, let alone publicly admitting them.

The GS was very adventurous, considering that most other consoles have powerful custom chips to add that vital spark of realism.

An 8-bit computerwithout a keyboard does not a console make...

With 15,000 GS owners in the UK alone, let's hope that cartridges become the norm – if not, there are 15,000 'defunct' C64s out there.

Franklin did leave us on a tantalising note, boasting "very, very exciting plans for the C64 this Christmas."

A package to upgrade the C64 to a C65, perhaps? The introduction of 3-inch disk drives, maybe? Nobody knows, but

Continued on next page ➤

• The GS is a flop, but would classics like *Ninja 3* ever have appeared without it? No – the GS has raised software standards tremendously

GB SYSTEMS —\/— LINK

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◀ one thing is for certain – I, and thousands of other C64 fans, are waiting with bated mice.

PD UTILITIES

If there's one thing the C64 hasn't got, it has to be serious software. Around 50 per cent of all software released in 1985 was not games orientated, but nowadays utilities are as rare as Dodo doodoo.

All is by no means lost, though, as there are some excellent utilities,editors and creators lurking in the Public Domain, many of which have been written by demo groups as development tools.

Binary Zone PD has a series of four double-sided utility disks, absolutely choc-a-bloc with handy programs. Disks two and three contain note-writers and demo makers respectively, but disks one and four are a little more interesting:

● DISK 1 – There are far too many programs to comment on in detail, so here are some of the best.

DIR Master is a wonderful tool which allows disk directories to be customised; filenames can be tidied, spacing bars added plus a whole host of features such as alphabetical sort.

Easy Catalogue allows you to read in disk directories and store them in a database, allowing your entire disk collection to be cataloguedl.

FLI Graph is a stunning editor which allows genuine FLI pictures to be created. In case you didn't know, FLI allows any 16 colours to be used in any character block (as opposed to the standard 4). The results are simply awesome.

Colorizer is for use with bitmap pictures, and allows the colours to be changed to suit your requirements. Its purpose is to spruce up standard four-colour logos, and is good fun if nothing else.

Char-Ed is a muticolour font editor, and allows characters up to 4x4 to be created. A good editor, but including fonts in your own programs is awkward.

Font-Ed is similar to the above, but permits both hi-res and multi-colour editing. Both editors are font creators only, in that graphics cannot be created with the character set.

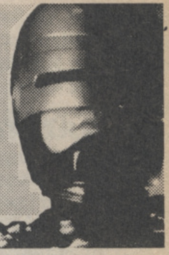
80 Column Screen, surprise, surprise, puts the C64 into 80 column mode.Well, to be honest it just halves the size of each letter, and if you don't have a Scart monitor or something similar, the letters are extremely difficult to read.

● DISK 4 – This disk features a batch of utilities by the PADUA team, including a picture converter (for ***Art Studio/Koala*** users), a nifty text editor, a couple of note writers (heavily inspired by Red Sector's ***CEBIT 90*** demo), a ranking editor (for other demo groups to use) and another colour editor.

Sound Master is a stunning music editor, allowing tunes of ***Last Ninja*** calibre to be created with relative ease. The demo tunes are superb, and the potential is mindblowing.

Hubbard Editor is, I think, an editor for creating Hubbardesque tunes, but the package contains very little documentation – as a result, it totally baffled me.

YOUR MOVE, CREEP



Just enough space to mention *Robocop 3*, the film of which is nearing completion. It does *not* star Peter Weller and the makers are aiming for a 12 certificate. Fear not, though, because the game should be the best so far.

Probe promises a cartridge spectacular, but I sincerely doubt that the gameplay will derive from the 16-bit versions (vector graphics galore). Watch this space.

Char-Ed is yet another character editor, and allows letters of various sizes to be created (from 1x1 to 4x4, but you could choose 2x3, or 4x1). Probably the best editor on the two disks.

EMC edit is by far the simplest multicolour picture editor I have ever seen, and is absolutely brilliant for the beginner. No fuss, no frills, just a standard joystick-operated drawing package. I love it!

99 Charsets is very novel indeed. The program contains 99 fonts from various C64 games – just select the desired one and it can be saved out for use in your own programs.

As mentioned earlier, the disks contain much more than the programs I have listed here they are quite astounding. I would certainly recommended them to the C64 owner who uses more than the SHIFT/RUN-STOP keys. Within days you'll wonder how you ever managed without them.

Contact Binary Zone PD at 34 Portland Road, Droitwich,Worcs, WR9 7QW.

CHILL OUT BY THE POOL

I've got just enough space left to mention ***American 3-D Pool*** from Zeppelin.

Up to eight players can compete in a tournament, and there are several computer/player combinations. The actual shot is lined up on a 2-D overhead screen – once this is done the computer displays the 3-D screen and plays out your shot.

The rules, as you may have guessed, are for American pool. I find it difficult enough playing English pool, but the game is fairly painless to learn. A number of trick shots can be performed for extra points, ranging from easy to damn impossible.

A tremendous little game, especially for two players. Nice graphics, good sound, in fact *everything* a budget game should be.

Andrew Roberts

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CPC

- **The Space Invaders are coming back!**
- **Transferring files from the CPC to the PCW**
- **Ocean's Power Up compilation reviewed**

BLAST FROM THE PAST

I don't believe this – ***Space Invaders*** is back! I played this for countless hours in the arcades a few (ahem) years ago. What a brilliant game – mono graphics (don't forget the green acetate strip across the bottom of the screen, though). metronome-style sound effects and absolutely no gameplay whatsoever...

Well, all of these things have been put right in the latest incarnation of the game. ***Super Space Invaders*** has been doing the rounds of the arcades for a few months, and Domark has picked up the licence for the home computer version.

All I know, though, is that the plot's different. Instead of trying simply to invade 'Planet Earth', the Invaders have an even more vicious, twisted, evil plan in mind – they're going to steal the Earth's cows. They really are from another planet, aren't they?

TALKING TO THE PCW

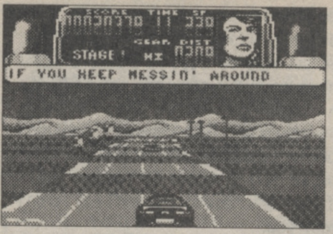
Peter Fulton of Hepworth, Norfolk, has a tip for anyone who wants to use a PCW printer to print out files. The Amstrad PCW range comes equipped with dedicated printers, and it's not really possible to link up these printers to any other machines.

However, the PCW can 'read' CPC disks. All you have to do is save your CPC document as an ASCII file. load up ***LocoScript***, the word processor provided as standard with the PCW, create a new document and then use the 'Insert Text' command to merge in your CPC document. While the PCW can read CPC disks, the CPC can't read ordinary (173K) PCW ones. However, both machines will work happily with CPC data-formatted (178K) disks.

While we're on the subject, ***Protext*** files created on either machine can be loaded and edited quite happily on the other. (You need ***Protext*** for both machines, of course – if you get the CP/M version, however, you can create program disks for both the PCW and CPC!)

POWER UP

It seems to be that time of year when software publishers are turning out compilations by the lorryload. Ocean can always be relied on to produce a good batch of games, so I was looking forward to seeing ***Power Up***, which has some real crackers on it. Here's the low-down:



• *Chase HQ*: If you don't go fast enough, you get an ear-bashing from Nancy back at HQ

- ***Chase HQ*** is a conversion of a really good Taito coin-op. It's a fairly standard car racing game in the ***Out-Run*** style, only this time you drive a police Porsche chasing after escaping felons. When you catch up with them you simply ram them off the road.

No real points for in-depth gameplay, then, but where the arcade machine really scored was its sheer speed. That's come over in the Amstrad version, too. It's an excellent driving game – one of the best on the CPC.

- ***Rainbow Islands*** is another Taito coin-op. It's a cut platform puzzler where you have to escape a rising flood of water and also avoid/kill loads of nasties along the way. You kill them, by the way, with, er, rainbows. The graphics are

Continued on next page ➤

NIGHT CODES

William Huddleston from Innerleithen has come up with the codes for all the levels of US Gold's *Nightshift*:

1 NO PASSWORD NEEDED!
2 CHERRY BANANA BANANA LEMON
3 BANANA CHERRY PINEAPPLE BLUEBERRY
4 PINEAPPLE LEMON PINEAPPLE PINEAPPLE
5 PINEAPPLE PINEAPPLE LEMON CHERRY
6 CHERRY BLUEBERRY BLUEBERRY PINEAPPLE
7 CHERRY LEMON PINEAPPLE BANANA
8 PINEAPPLE BANANA PINEAPPLE CHERRY
9 PINEAPPLE LEMON LEMON CHERRY
10 LEMON BANANA BLUEBERRY BLUEBERRY
11 BANANA PINEAPPLE CHERRY BLUEBERRY
12 CHERRY BLUEBERRY BANANA BLUEBERRY
13 BLUEBERRY CHERRY BANANA PINEAPPLE
14 PINEAPPLE CHERRY BLUEBERRY BANANA
15 BLUEBERRY BLUEBERRY PINEAPPLE PINEAPPLE
16 BANANA BANANA PINEAPPLE BANANA
17 BANANA BLUEBERRY CHERRY BLUEBERRY
18 BLUEBERRY LEMON LEMON BLUEBERRY
19 LEMON PINEAPPLE CHERRY BLUEBERRY
20 CHERRY PINEAPPLE PINEAPPLE CHERRY
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27 BANANA CHERRY LEMON BANANA
28 BLUEBERRY BANANA BANANA PINEAPPLE
29 CHERRY BLUEBERRY CHERRY PINEAPPLE
30 CHERRY CHERRY BANANA BLUEBERRY

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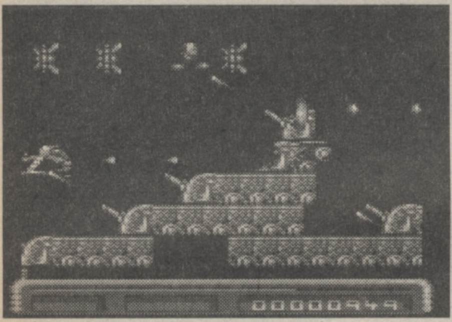
MACHINE SPECIFICS

excellent (if you can live with cuteness) and the gameplay superb.

- ***Turrican*** is a scrolling shoot-'em-up, originally from Rainbow Arts. It features brilliantly fast, smooth graphics, loads of baddies, tons of weapons and it's both big and tough enough to keep you going for ever.
- ***X-Out*** would have been the best shoot-'em-up last year if it hadn't been for ***Turrican***! ***X-Out*** is also from Rainbow Arts, and it's a more traditional style shoot-'em-up where you control a ship flying through an undersea world filled with monsters, guns etc etc.

X-Out is very colourful, extremely fast and boasts a novel extra feature – a weapons shop. You gain tokens by destroying the bad guys which spend them on extra weapons and other goodies. It's rather tough, but it's also extremely good.



• *X-Out*: Fast, smooth, colourful, tough – and it's got gameplay too!

- ***Altered Beast*** is something a bit different, but no, I'm not saving the best till last. ***Altered Beast*** is a bit of a waste of space in this company, I'm afraid. It's a scrolling (more like creaking) mythological beat-'em-up featuring blocky, confusing graphics and sprites as big as (and as mobile as) houses. Play it if you really have to, but don't say I didn't warn you.

With the exception of ***Altered Beast***, the games on ***Power Up***, which costs £15.99 on tape, by the way. are excellent. If you're missing three or more of the games on this pack, you've simply got to buy it…

NEW ADVENTURE FANZINE

Adventure fans might like to know about a new fantasy fanzine which covers role-playing, games and books and includes short stories, reviews and even the odd competition.

It's called ***The Adventurer's Herald*** and the editor is Rik Jones. Rik is on the lookout for contributors, incidentally, so if you think you can write, get in touch with him.

Copies of ***The Adventurer's Herald*** cost a mere 80p each, and can be ordered from PO Box 522, Tweedale, Telford, Shropshire.

Rod Lawton

MACINTOSH

● Apple's bemusing code naming explained
● Outbound Notebook Mac clones revealed
● PC emulation (as if you would want it!)

IN THE PINK

The joint operating system which Apple and IBM are to create is codenamed 'Pink'. Want to know why?

Well, when Apple started work on System 7, the company also started thinking about System 8. A large noticeboard was fixed to one of the walls in the main programming location in Cupertino, and cards were stuck up with different parts of the two projects; programmers signed their names to whichever features they wanted to work on.

For simplicity, the cards were colour-coded: System 7 cards were blue, while the System 8 cards – which will now become the new joint venture software – were on pink cards; and with stunning originality, Apple therefore decided to codename the project 'Pink'. So now you know…

OUTBOUND REVEALED

At the Boston MacWorld Expo a couple of weeks ago, Outbound Systems revealed its new notebook-sized Macintosh-compatible computers.

The lowest-priced model will cost about $2,529; this is a 68000-based, 2Mb machine with no hard disk. The top-of-the-range machine, which has a 60Mb hard disk, 4Mb of RAM and a 68030 processor, will sell for $4,299.

The computers all come with a set of Macintosh ROMs installed: Outbound has signed a license agreement with Apple which allows the company to do this. Apparently, to avoid problems, Outbound actually sells you a Mac 512KE, Plus or SE when you buy one of its machines; it then re-purchases the Mac from you, minus the ROMs which you keep and install in your Outbound.

You never see the Mac, but this rather strange method means that Outbound is working within the letter of its licensing agreement. Hmmm…

Whether the new Outbound machines will be best-sellers will depend on exactly what Apple's new portables are like when they appear on the scene in October. One major advantage of the Outbound is that it has a built-in floppy disk drive, whereas Apple's models (or, at least, the cheaper ones) will require an external disk drive.

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NEW FLIGHT SIM

Microsoft has just released a new version of its flight simulator for the Mac.

Version 4.0 will run in colour or black-and-white on all Macs later than the Mac Plus. It features 3-D graphics, and offers a wide range of planes to fly. You can even design your own plane, modifying its aerodynamics and appearance as you wish. There is on-screen tuition available, which ranges from the very basics to advanced aerobatics.

Watch out for a review very soon.

MAC ACCELERATOR

Bristol-based company Division Limited has just produced an add-in board for the Macintosh called MacWatt, which, it claims, increases processing power to that of more than 10 Mac IIfxs

The board's central processor is Intel's i860, one of the fastest chips available. It features a selectable processor speed and can carry up to 16Mb of RAM on board.

The board supports C and Fortran 777 compilers and a macro assembler. Boards can be connected together to provide parallel processing which will speed up work even more. According to the Managing Director of Division, MacWatt will be ideal for, "users who require enormous floating point performance, for instance in computational physics and chemistry, finite element analysis or advanced graphics applications." And we all know loads of people using the Mac for finite element analysis, don't we…

The board costs just under £5,000.

☎ If you're interested, you can contact Division Limited on 0454 324527.

NEW VERSIONS OF SOFTPC

Insignia Solutions has just released three new versions of its ***SoftPC*** software, which allows a Mac to emulate an IBM-compatible PC and to run PC software.

Entry Level SoftPC is designed for any low-cost Mac or Mac Portable, and needs only 2Mb of memory (4Mb if you're running System 7) and 2Mb of hard disk space. The company says that it is, "ideal for text-based applications and limited graphics programs."

Universal SoftPC is can be used on all Macs, and again emulates a PC/AT. Essentially, this is a higher-cost version of ***Entry Level SoftPC*** which can be used by owners of faster Macs. It also supports another Insignia product, ***SoftNode***, which allows you to access PC-format CD-ROMS and to use software which requires Novell Netware.

Finally, ***SoftAT*** is designed for use on the higher-level Mac (including, according to the press release, those using the 68040 processor, which means that the company is jumping the gun a bit since the '040-based Macs aren't going to be released until October). It is, and I quote, "ideal for more demanding applications, including graphics and number crunching."

If you need PC-compatibility on your Mac, the ***SoftPC*** range is a good bet – earlier versions of the software were reliable, if a trifle slow, and the new versions have had a number of new features added. The programs will be distributed through Principal Distribution: ☎ Give the company a call on 081-677 7631.

Ian Wrigley

POSTCARD FROM AMERICA

When Apple first introduced System 7 at the 1989 Developer's Conference, it showed something called the 'New Print Architecture' (NPA). Printer drivers have never been fully documented, so when new printers come on-line programmers are sent back to the coding-board. The NPA would provide support for background printing, colour and halftones for all output devices. A document could contain more than one page size and page orientation.

A terrific part of this architecture is the concept of a Desktop Printer, which allowed users to have an icon on their desktop representing a particular printer. For solitary Macintosh users finding a printer is not a problem – there's usually just one. But in a network environment there can be multiple LaserWriters, a Fax Modem, and Print to Disk utilities competing for your document's attention. You could then drag a document onto the particular printer icon, and it would print with no hassle.

Unfortunately, Desktop Printers and the New Print Architecture didn't make the cut into the first release of System 7. But Leonard Rosenthol, one of the programmers of *Microphone II*, has resurrected them in *DTPrinter*. It was his entry in the MacHack programming contest last June.

The *DTPrinter* application is customised for the type of printer available. In the case of networked printers like the LaserWriter, the individual printer is selected. When you quit, the program is automatically renamed with the prefix "`DTP/`" followed by the name (or type) of the printer chosen. It even changes its icon to reflect its new abilities.

When you drag a document to the printer you want, the printer is set up, the document's owner is launched and you're presented with the Printer Dialog of your choice. Very neat and convenient.

The hack is freeware and is available from most user groups and electronic services.

David Morgenstern

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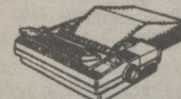

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WHOLE WIRED WORLD

As an alleged hacker turns the Aussie legal system into a turmoil, Steve Gold reports on the court case and then zips over to the States to find Atari games bargains, Apple feeling the squeeze and plenty of new packages for the ST

PORTABLE RADIO NOTEBOOK PC

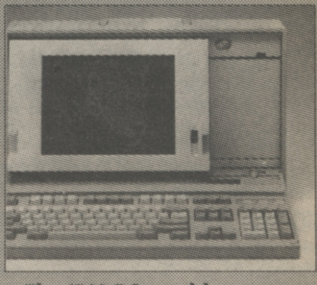
IBM has introduced a portable, battery-operated personal computer that can communicate with other computers via radio waves or cellular telephone links.

Called PC Radio, the machine is designed for service technicians, sales people, police and other mobile workers who need access to information in a larger computer while on the road.

Pending approval by the Federal Communications Commission (FCC), the US Telecom regulatory body, IBM plans to release three versions of PC radio. One will connect with standard cellular telephone systems, while another will use the Ardis radio network owned by IBM and Motorola in the US. The third will connect with standard telephone lines via a built-in modem.

All of the models will be able to send and receive faxes. The PC Radio unit itself comes in a case with the same footprint as an A4 sheet of paper. Tipping the scales at 6.4 pounds, the machine is said to be 'ruggedised' and highly resilient to vibration, rain and extreme temperatures.

The machines will ship in the autumn, IBM officials in the US have announced. No prices have been given.



• The IBM PC could soon get portability if its cellular phone links are approved

EXTRA RAM FOR POQET

When it was first released, the Poqet pocket PC cost in excess of $2,000 and it wasn't what you might call a perfect PC. Several revisions later, the machine sells for just under $999 on this side of the Atlantic and is moderately popular.

Trouble is, to get any decent packages up and running, you need extra RAM – this costs money. Now Poqet has recognised this deterrent to potential sales and has upgraded its basic machine to include a 512K RAM card as standard, yet has not increased the price $1,450 in the US.

Poqet in the UK has yet to make a decision on whether to upgrade the specifications on the machine sold over here. Considering that the street price of the Poqet is under $1,200, and mail order supplies are plentiful, there's never been a better time to buy a Poqet.

ST QUALITY AT BUDGET PRICES

Richard Betson has left his position as vice president of Talon Technology and formed a new company called Rimik Enterprises. The aim of the company, according to Betson, is to get quality packages to ST users at budget prices. Judging from his company's first four releases, he stands a good chance of achieving this goal.

The four packages are *DT Paint, Menu Plus, MultiGEM* and the *MultiGEM* utilities disk. *DT Paint* is a high resolution paint program that runs as a desk accessory. The $49.95 package is said to be as good as DTP packages such as *Calamus, PageStream, Fleet Street Publisher, Publisher ST* and others, but at a much lower price.

Menu Plus is a full featured desktop enhancement package that creates menus and the like to shield the user from the vagaries of TOS. The $39.95 package is as economical on RAM as it is on price, using just 32K of memory.

MultiGEM, meanwhile, is billed as a power-packed multi-tasking system that uses the standard Atari desktop as its front end. The package works with GEM-based packages and, subject to memory constraints, will allows up to six GEM-based packages to be loaded and run at the same time.

The $99.95 package will even allow TOS and TTP programs to multi-task in their own windows, the company claims. The *MultiGEM* utilities disk is, as the name implies, designed to work with MultiGEM. The $29.95 disk is packed with utilities such as Multi-mat, a background disk formatter; Multi-launch, a menu tree program launch package; Multi-copy, which allows multi-tasking file transfers; and Multi-Print, a multi-tasking print utility. The bad news is that Betson has issued a press release with all this information on, but hasn't left his address or phone number. Needless to say, I'm on the trail of this information and will reveal it to you next week.

SECOND-HAND ATARI EXCHANGE

The Computer Dungeon is the name of a new company, based in Lansing, Michigan, in the US, which buys, sells and trades software for the Atari ST, XL/XE and Lynx computers. The company claims to have several thousand titles always in stock, and will send out its catalogue of goodies to anyone who asks nicely.

The catalogue aims to sell software to users of Atari computers but, again, if you ask the company nicely, it will allow trades. The general rule is that a $5 fee is enough to exchange one package for another. To stop any naughties, the company is insisting that your supplied software must be on the original disk and come with all relevant documents. In return, it guarantees that the software it is selling/supplying is not pirated.

Sounds like a good way to obtain those unusual US software packages for your Atari. Contact: The Computer Dungeon, P.O. Box 25011, Lansing, MI 48909, US. Tel: 0101-517-887-8741.

AUSSIE HACKER TEST COURT CASE

While computer hacking is rapidly becoming an everyday occurance in the UK and US, down under in Australia it's still something of a novelty.

In Melbourne, a defence lawyer has been arguing that charges should be dropped against his client who is accused of breaking into US military and space agency computers. Representing 20-year-old student Nahshon Even-Chaim, lawyer Felicity Hampel told a pre-trial hearing at the Melbourne Magistrates' Court in mid-August that it remains unclear if Australian legislation against computer intrusions, first enacted in 1989, applies to activities beyond Australia's borders.

Hampel said that in only one of the cases presented by the prosecution had a computer in Australia been infiltrated, so all but one of the charges should be dropped. Even-Chaim is charged with 48 counts of unlawful computer access via telephone, of breaking into computers and disrupting operations.

The case is an important one in Australian legal terms. As well as being a test case, it is also the first of its type in Australia. For their part, the Australian authorities allege that Even-Chaim broke into several networks between February and March last year and disabled computers at the US National Aeronautics and Space Administration in Norfolk, Virginia, in the US, for 24 hours.

The prosecution also contends that Even-Chaim later boasted in phone conversations taped by Australian police that he had penetrated the computers of the high-security Lawrence Livermore National Laboratory, a nuclear research facility in California, and bragged of "wreaking havoc" on other systems.

The prosecution says the student, who allegedly used the handle `Phoenix,' also broke into computers of Australia's Commonwealth Scientific and Industrial Research Organisation, private companies and the universities of California at Berkeley, Purdue in Indiana and Madison in Wisconsin and that Even-Chaim's alleged attack on the computer systems of Execucom Systems Corporation of Texas destroyed a number of on-line files, including the only inventory record of the company's assets. The case is continuing and is expected to last several weeks. ■

APPLE MACS SQUEEZE INTO SPACE

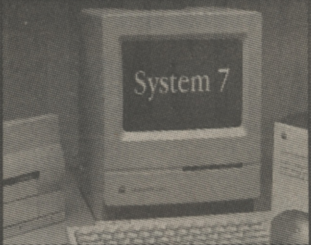
`On the fly' file squeezer/unsqueezer packages for the PC are nothing new, but on the Mac they're rarer than a CP/M notebook computer.

Aladdin Systems is trying to alleviate this situation with its Spacemarker package. Priced at $60, the package carries `on the fly' file compression and decompression without requiring the user to carry out any special operations. In use, the package sits in RAM and intercepts most drive commands from the Mac's operating system, compressing and decompressing the files as required.

Aladdin claims that its software has a similar performance to hardware-based compression boards, averaging a 50 per cent compression rate on most files.

Don't rush out to order the package just yet, however, as the finishing touches have still to be made to the software. Shipment is expected this coming October.

Contact: Aladdin Systems, 165 Westridge Drive, Watsonville CA 95076, United States. Tel: 0101-408-761-6200 Fax: 0101-408-761-6206.



• The Spacemarker squeezer will soon be out for the Mac

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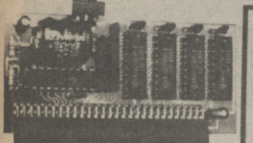

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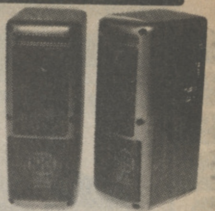

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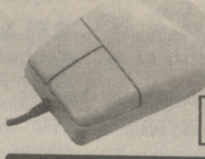

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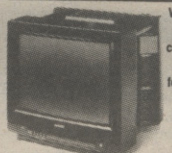

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DYNAMIC DATA

Mary Branscombe delves into the depths of the PC, looks at BASICs old and new and gets her hands dirty with EPROMS and the Z80 cross assembler

Microsoft's Visual Basic system for developing Windows applications seems to be designed to be affordable as well as simple to use; two new add-ons cost only £39 each. The Control Development Kit lets you add custom controls to the Visual BASIC Toolbox, although they have to be written in C rather than in BASIC. Alongside the standard controls including command buttons, check boxes, scroll bars and file system controls, you could have video and animation controls for multimedia systems or recognition controls for the Pen Windows environment.

The Windows Help Compiler enables you to add on-line help systems to Windows applications using the Windows help engine.

Z80 CONTROL

ST programmers who want to put code on to an EPROM can control the hardware from Z80 cross assembler, sending initialisation command strings straight to the ROM-programming device. The software also includes conditional assembly language, which will come in handy for debugging the programs before they go on to the ROMs. Full details from D&S Software on 0908 615104.

RELATE TO DATABASE

If you're looking for a relational database system that runs under Windows, SPI is promoting its £395 WindowBase for £149 until 30 September 1991. The system supports Structured Query Language (SQL) and enables users to generate queries by selecting options in a dialogue box.

Dynamic Data Exchange allows you hot link data in other applications so that information is updated automatically. The additional application developers kit includes a set of C and C++ developer tools, C++ class libraries and libraries of database functions as well as hooks enabling WindowBase applications to access code stored in Dynamic Link Libraries (DLLs). A run-time version for distributing WindowBase applications will be available later in the year. More details from SPI on 0743 844081.

OS/2 AND MORE

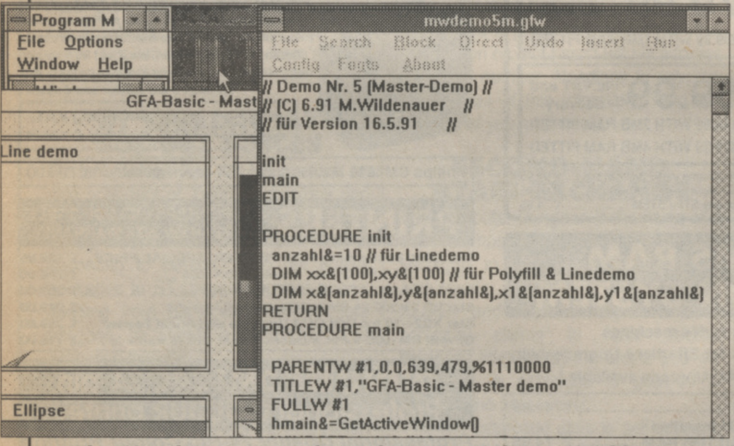
MultiSys is another handy utility from the OS/2 User Group that lets you have several different operating systems on a single disk partition, which makes life easier if you're writing versions of your code for DOS, UNIX and OS/2.

MultiSys gives you a menu to choose which operating system to use next time you boot up and moves files around so you'll be able to find them. The software costs £80 from the OS/2 User Group, on 0285 655888.

ADA SUPER-POWER

Alsys is developing an Ada compiler for the Supernode II parallel computing project. It's part of an Esprit project to develop operating systems and software tools that will enable parallel computers to be used for commercial applications including CAD, modelling and simulation where the processing power of parallel systems could really make a difference.

Alsys has a range of Ada compilers for machines ranging from the PC to transputer-based systems. ■



```
// Demo Nr. 5 (Master-Demo) //
// (C) 6.91 M.Wildenauer   //
// für Version 16.5.91     //

init
main
EDIT

PROCEDURE init
  anzahl&=10 // für Linedemo
  DIM xx&(100),xy&(100) // für Polyfill & Linedemo
  DIM x&(anzahl&),y&(anzahl&),x1&(anzahl&),y1&(anzahl&)
RETURN
PROCEDURE main

  PARENTW #1,0,0,639,479,%1110000
  TITLEW #1,"GFA-Basic - Master demo"
  FULLW #1
  hmain&=GetActiveWindow()
```

• The Visual Basic Control Development Kit lets you add your own tools to the Toolbox while the Windows Help Compiler lets you build your own help messages into your Windows

SEARCH FOR CLUB BASIC

Could you please let me – and other interested readers know – if there is a user club for BASIC and GWBASIC programmers? Maybe there are others like myself who would like to help each other solve problems?

At the moment, I need guidance on how to add up five columns so that each column has a separate total at the bottom.

Louis O'Brien, Cheadle.

There must be a GWBASIC programming club out there somewhere, but I haven't been able to find it. If any *Express* readers are involved with a BASIC programming club, please let us know where you are and what you're doing.

Adding up figures in columns to give sub-totals means separating the figures and you can use a two-dimensional array for this. The array needs to be five elements across, to hold the five columns. Take the number of figures in the longest column as the other dimension of the array.

Put each column of figures into the corresponding column of the array, then add up each column and put the result into a SUBTOTAL variable.

```
DIM FIGURES(5,8)
```

creates an array five elements by eight and the first column of figures will be in elements (0,0) to (0,7) – remember that the numbering starts at zero. You can use a loop to add up the figures; Subtotal1 will hold the total for the first column at the end of the loop.

```
Subtotal1 = FIGURES(0,0)
FOR I = 1 TO 7
Subtotal1=Subtotal!+ FIGURES(0,I)
NEXT I
```

Repeat the loop for all five columns and there are your separate totals. If some columns have less than eight figures, this isn't a problem because the empty elements in the array contain zero, which won't affect the total.

If you used a language with procedures – like QBASIC – you could write that loop once and call the procedure for each of the five columns.

THE NITTY GRITTY OF THE PC

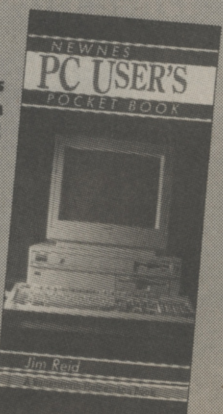
Newnes PC User's Pocket Book • Jim Reid • ISBN 0-7506-0085-3 • Butterworth-Heinemann • £12.95

You can write a lot of code without worrying about the machine that's going to run it, but if you do know the ins and outs of your platform you can stretch it to the limit. The title of this book is misleading – it's more for the dedicated programmer than for the casual user and it's chunky enough to call for large pockets if you want to carry it around with you.

If you're doing any assembly language programming on the PC, you probably will want to have this book handy, because it's a concise but comprehensive reference guide to the PC, covering everything from DOS functions and interrupts to 8086 registers and sending information through the serial port. You can find the same information in other books, but you will probably need a rucksack to carry them round with you and yet the Pocket Book doesn't skimp on necessary detail.

It covers the 8086, 80286, 80386 and i486 processors, but not any of the corresponding maths co-processors, and versions of DOS up to 4. It's a shame that the author wasn't able to include the recently-released DOS 5, although he sensibly points out that even writing for DOS 3.3 will limit the number of machines that your application can run on.

There's plenty of useful code in the book that shows you how to use the interrupts it documents and a brief outline of the principles of assembly language programming that's clear enough to make the rest of the book make sense.



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TECH TIPS

Are you in a dilemma over your modem? Have you got double trouble with your single-sided disks? Do you dream of emulation? Read on...

Flipped!

I have been informed that notching floppies to get double-sided disks from single-sided ones, can cause damage to your drive.
Is there any truth in this or can I make all my disk flippies?

T.S. Yeo, Dunbartonshire, Scotland.

AS LONG AS YOU make a clean cut into the cardboard sleeve of the disk you intend to convert to a flippy, or use a commercially available disk notcher (try mail-order advertisers, they should be around £5), you shouldn't have any problems. Be aware, however that if you make this modification to a floppy designated as being single-sided, then the integrity of the data on the flip side cannot be guaranteed.

Ports in a storm

I own an IBM AT clone. I have a CGA graphics card, disk controller card and an RS232 serial port, and it is with the RS232 port that I am experiencing problems.

The 9-pin serial port itself works perfectly, but the printer port doesn't work at all. And since adding the RS232 port my other printer port on the CGA card does not work either.

I have tried setting the other port on the RS232 port to LPT2, but it has no effect. Please can you or any of your readers help? I have an Amstrad DMP3000.

M J Pitt, Runcorn, Cheshire

ONE OR BOTH of us is very confused Mr Pitt. From your description I can't tell how many ports you've got and whether they are serial port or parallel printer ports.

However, I can offer some general advice. I assume the story goes something like this: your AT came equipped with a standard 9-pin serial port and a standard parallel printer port and these worked fine. At some point you added a serial expansion card which has two 25-pin serial connectors and that's when your problems began.

The first observation is that no matter how many serial ports you have, they should have no effect at all on the operation of your printer port. This raises the possibility that your expansion card two of these.

You suggest that by removing the serial card, your standard AT ports behave normally. The question then is to determine exactly what is on your new expansion card. Either refer to the documentation, or go back to the dealer. The good news is that you certainly be able to get everything working – but before you can find the solution you need to know exactly what the problem is.

EPROM toaster

I hope that you can help me with the following problems:
1) Where can I obtain an EPROM Prgrammer suitable for either the Amiga 200 or Atari ST? I wish to 'blow' my own programs on to EPROM to use with the Atari.

Also, it is possible to obtain the plastic cases and circuit boards on which the EPROM chip is mounted to insert it into the cartridge port?
2) I recently took advantage of Commodore's A500 to 2000 upgrade offer. As a result I now have a 20 Meg Triangle Turbo 3 hard disk drive spare. This has a SCSI port on the back allowing other drives to be added.

As my A2000 has a 40 meg hard disk already fitted there is a SCSI port attached to this. Is it possible to use the A2000 to control my Triangle drive and use it as a second hard disk? If so what must I do and where might I purchase a suitable SCSI lead?

Stuart Robertson, Aberdeen

THERE ARE TWO KINDS of EPROM programmer, dedicated and stand alone. The dedicated one plugs into a specific computer and works from on-board software. This can be an easier and more elegant solution, but has the disadvantage that if you change to another computer, you'll need to change programmers.

The other kind stands alone and connects to the computer via the RS232 (serial) port. This is a better bet in the long run because although you may have to hunt for suitable software to drive it, you won't have to replace the hardware.

A good jumping-off point for this sort of hardware is Maplin on 0702 554161. If you 're intending to develop programs to run on EPROM you'll need an eraser as well (it never works first time).

Alternatively, it's possible to use RAM chips with battery back up to emulate EPROMs during development. The program is loaded into the RAM chips and the write line is disabled. Unless power to the chip is lost, it will behave as an EPROM, because it's easier to clear and write to RAM, this is a necessary piece of kit for an EPROM developer.

As for the plastic boxes etc, you could try one of the companies selling software in cartridge form or one of the large suppliers such as Datel.

We couldn't get the Commodore SCSI interface to behave in a true SCSI manner so I'm afraid you"re out of luck.

Disk Doctor

Recently I was approached by a friend who asked if I coul d help out with a disk that a colleague of his seemed to have knackered up. As she works in a busy office she is finding the apparent loss of information worrying.

My friend explained that there are about 38 .DOC files on the disk and that access to 10 or so result in the prompt line display showing: `" " (name.doc)" is not a supported file type"`**. One of these files (over 120K) contains customer information vital to her. When I slammed it through CHKDSK (MSS DOS v3.3) I found that I too have problems when so much information came up on the screen. I'll illustrate with one file:**

```
\FLJBOOKS>DOC
Allocation error, size adjusted
100 lost clusters found in 10
chains
Convert lost chains to files
(Y/N)?
\FLJBOOKS.DOC
Is cross linked on cluster 99.
```

In fact, the first three files that came up with "allocation error" were the IBMBIO.COM, IBMDOS. COM and COMMAND.COM files. I believe the package she is using is called DisplayWrite 4.

David Ross, Durham

IT SOUNDS as if strong medicine is called for. First rule when there is a problem on a floppy disk is make a copy of the corrupted disk if that's possible. This way you always have the original to make more copies of if your disk surgery kills the patient. Dead and dying disks with corrupt word processor files can sometimes have the files recovered by attempting to load them into a less fussy word processor or by using a word processor with a file convert utility that turns the affected file into pure ASCII.

It sounds as if you require something much stronger, though. Disk utilities such as Norton Utilities or PC Tools can help with disk and file problems and are very powerful, but can

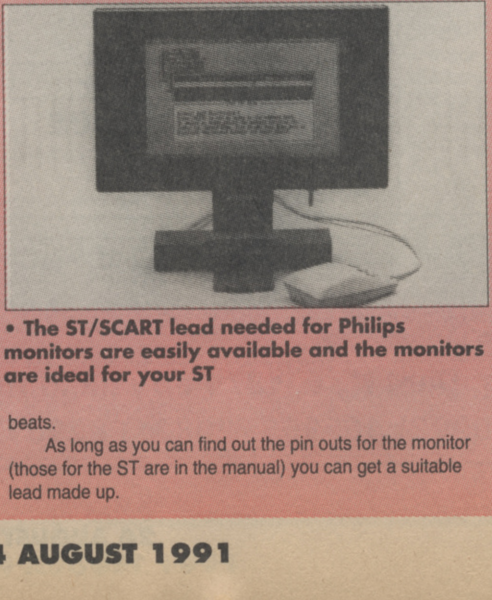
Monitor for the ST

I am currently looking for a second-hand monitor, and am a bit confused as to what type is suitable for my STFM.

I have seen many adverts for 'CGA colour monitors' for very reasonable prices. Is the CGA standard capable of utilising the Atari's output to the full? Also, is the Philips CM8833 as sharp as the Atari SC1224?

In short, what resolution/dot pitch and input signal (RGB, composite etc) requirements do I need from a monitor for it to do my ST justice?

K D Winch, Uplands, Swansea



• The ST/SCART lead needed for Philips monitors are easily available and the monitors are ideal for your ST

THE ATARI ST SEEMS to work best with an RGB monitor. The Philips monitors with a SCART connector are generally the simplest to use as the ST/SCART lead is simple to get. Various other monitors will work, though. We got an Amstrad CPC colour monitor working off the back of an ST and colleagues report varying degrees of success with other RGB beats.

As long as you can find out the pin outs for the monitor (those for the ST are in the manual) you can get a suitable lead made up.

be dangerous in the hands of a careless person. If you wish to use them, be sure that you understand them and their documentation. If you have any qualms about their use, get someone who understands them to watch over your shoulder.

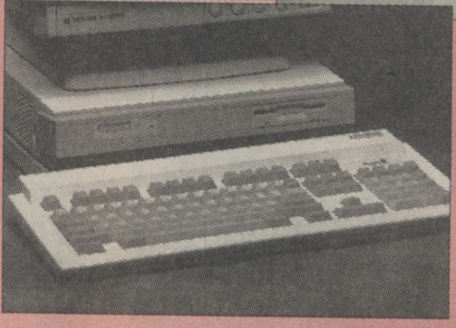
Arc emulator

I have an Amiga 500 and I would like to transfer work from it on to an Archimedes that we use at school. Please can you tell me if there is such a thing as an Archimedes emulator for the Amiga 500. How much will it cost? Where can I get it from? And is it available on PD?

M Gulamali, Middlesex

THE AMIGA doesn't have enough on board hardware to emulate the Archimedes. The Arc runs RISC (Reduced Instruction set Chip) architecture while the Amiga is based on the more conventional Motorola 68000 processor.

To put it in its true perspective, whil a Lada Samara and a Ferrari Testerossa are both motor cars, you can't get five passengers in a Testarossa because it hasn't got the hardware capability. A pity but that's the case. You can't emulate an Arc with an Amiga and a Testerossa just hasn't got enough seats!



• Would you want to get your Amiga to emulate the Archimedes and vice versa? There are people out there who would and they have their reasons, but unfortunately it's impossible

Get me on line

I'm in a dilemma. I just bought a Prism VTX 5000 modern from a classified advert, but it wasn't supplied with any instructions (other than how to access Micronet), and so I don't know how to link my Spectrum to any of the other numerous BBs throughout the country (having checked the baud rate of course).

I would also like to know what software I need to access other BBs and viewdata (eg CASH-TEL – Maplin Electronics) as to access these was the main reason for sending off for the modem in the first place (apart from the fact that it was virtually free).

James Handley, Barnes, London

THE ANSWER is in the software. To get on to scrolling BBs (which most in the country are) you'll need purpose-written software for your VTX. There's a PD title called *Firescroll* which is reckoned to be pretty damn good and one that you can buy called *Dr Scroll* that has a rather elegant X-modern file transfer mode.

You may have problems with some BBs because the VTX5000 has a feature that causes it to wait for anything between 8 and 12 seconds before sending its carrier. Some scanning (multi-speed) boards can't take being ignored for so long and hang up.

If you're have trouble getting a VTX500 to work, don't kick the VTX, kick Alan Sugar. When he 'bought the company' and the Spectrum was Amstradised, certain changes to the hardware on the Plus 2A and Plus 3 caused compatibility problems (Thanks, Al!) Watch this space for the solution.

PC Gamester

I have recently bought a 386 PC and I am now tired of just playing games. I have suffered a creative urge and now wish to start writing games.

Are there any high level programming languages, or utilities, that will assist me producing games/adventures? Such as STOS/AMOS and STAC? Even books would help.

A K Tanablan, Gravesend

NO SOFTWARE HOUSE would admit to an integrated games playing environment for the PC along the lines of AMOS or STOS. The closest the PC seems to come to being a games creation engine is with adventure creation programs avilable in the Public Domain.

If giving the troll the eggs and murdering Gollum isn't your cup of hemlock, I'm afraid the only read answer is good old assembly language. This black art requires a lot of effort and has all the user friendliness of a BR Travel Centre. High-level languages such as BASIC, C, and Pascal may allow you to put together some fairly clever little projects, but for that session exterminating a life-form, flying a jet sim or doing anything that requires fifth gear programming, nothing short of assembler will do.

Guru numbers

As an Amiga owner I am still trying to find out what the Guru meditation numbers mean. 00000003 seems to be a favourite of my machine, but I have numerous ones ending in three non-zero digits.

I have also had problems with an RS232 port on a card in an MS-DOS slot on the XT Bridgeboard in an Amiga 2000. I have a Diablo 630 printer which is currently interfaced for RS232 on the Amiga seril port (which can't be accessed by MS-DOS), and I would like to drive it from a serial card.

Apparently the interrupt needed for the printer is IRQ2. This doesn't seem to be available on my card (which is a dual port card offering IRQ4 or IRQ5 alternatives). In the early days of my experience with MS-DOS, my ignorance of MODE operation was a problem, but I have finally arrived at the conclusion that I need a different serial card. Do you know of one which doesn't need a second mortgage and which will drive my printer?

John W. Stanley, Wistatson, Crewe

BET YOU THOUGHT the Guru was going to be the more difficult question. Nope ... there's nothing in the world more difficult than RS232.

But first, the Guru. There are two kinds of Guru alert: those that crash your machine, and those that don't. Also, there are two causes: system soft-ware problems, and 68000 traps. So it follows that there should be two kinds of Guru message.

The first looks like this:

```
Guru Meditation
#00000003.0000xxyy
```

(look familiar, John?)

The number before the full stop tells you the 68000 trap number, and number 3 is an address error – specifically, trying to access an even word on an odd-byte boundary. Others include 2, a bus error; 4, illegal instruction; 5 divide by zero; and 8, a privilege violation.

The numbers after the full stop give the address of the offensive instructions. The second type of Guru message has more non-zero numbers and looks like: Guru Meditation #aabbcccc.0000xxyy

Here, byte a identifies the area of system software that generated the problem; byte b flags the cause of the problem and echoes the accompanying text message; and word c gives a cross reference to the specific error which can be found in the exec/alerts.h developers file.

For example, if the a-byte is 02, the problem is in the graphics library, 04 is intuition, 07 is AmigaDOS, 13 is the keyboard, and so on. The b-byte has a value from 1 to 6 (01 to 06) and may mean "no memory", and 1/0 error, or that the Amiga is having trouble with a library or device. For a complete rundown on Gurus acquire a copy of Ariadne Software's *Kickstart Guide to the Amiga*, around £13 from most good bookshops.

The printer problem is a curious one. In Sybex's *The MS-DOS Handbook* (£18.95) by Richard Allen King, there is an example of using the serial port with a printer. Fortuitously, the printer is a Diablo 630. King gives the set-up details of:

```
MODE COM1:1200,N,8,1,P
then
MODE LPT1:=COM1
```

However, assuming you already knew this, your problem lies elsewhere – and I mean somewhere other than the IRQ setting. Printers really don't care which IRQ is being used because they have no way of knowing. IRQs only become an issue when you're using more than one serial device, and I would guess that in an Amiga 2000 that would mean more than one device on the MS-DOS side.

If MS-DOS can't access the Amiga's serial port, that should mean it isn't aware of its existence.

What this boils down to is that I can't see any reason why your printer wouldn't work from any serial card under MS-DOS. If yours doesn't, I'm afraid you need more professional advice than I'm able to give you.

Joystick blues

Can you help? My Amiga joystick ports are on the blink. If I'm playing a dual-player game like *Battle Squadron*, pressing fire on either joystick causes both ships to fire. Movement is OK. It's just the firing.

Can I fix it myself, or is it a repair centre job? The guarantee has run out.

Gary Miller, Dover

WELL, to state the obvious, it seems as if your wires have been crossed somewhere. However, rather than attempt to take your Amiga apart and try to fix the problem, it would probably be better (and safer) to send it to a repair centre and get it done properly. ■

PROBLEMS?

Keith Pomfret might be able to help . Write to:Tech Tips, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW

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● **KCS PCXT** Emulator. Youve read the reviews, it's brilliant. Fits neatly in to expansion slot, and allows you 1 meg RAM as well. Genuine reason for sale. Bargain at £170 o.n.o. Phone 081 395 2525.

● **AMIGA A500** for sale, 1Mb, 60 games, joysticks. £250 or swap for Famicom with games or Lynx hand held. Contact Martin, 25 Kilnknowe Place, Galashids, TD1 1RH, Scotland or phone (0896) 4322.

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● **FOR SALE** A500 power supply, £10. 2 modulators, £5 each, and Falcon F16, £7. F29 Retaliator £8. Xybots £5 and Spritz Paint £5. All boxed and originals. Phone (0949) 837235. Ask for Justin.

● **AMAS** midi Amiga Sampler for sale, includes leads + midi leads. Boxed as new. sale for £35. Tel: 0272 837252, ask for Simon.

● **DR T's** midi recording studio with manual, original and unregistered. £25 only. Call Ken on 0929 462634 after 6pm.

● **AMIGA PD** for sale, 70p per disk, Amiga 590 hard drive wanted. also original games, wanted. Tel Dave on Sheffield 0742 781490.

● **AMIGA 500,** half meg upgrade, A590 20Mb hard drive, software, manuals, joystick, modulator, £550. Ring Adrian on 0322 338928 between 5-9pm please.

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● **PLEASE** please has anyone got an Amiga TV modulator they can sell me. Will pay up to 15 pounds, will collect from Brighton area only. Call Nick (0273) 673639 or write to : 7 Brede Close, Brighton, BN2 5GR.

● **AMIGA** P.S.U. for A500, only £20. Amiga 1/2 meg with clock, £20. Amiga X-Copy hardware, only £10. Ring 021 558 6421 and ask for Tony.

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● **FOR SALE** Amiga A500 with half meg upgrade and external disk drive with Syncro Express, chip includes software and mouse modulator etc. £250 o.n.o. Tel 0924 279886.

● **ZENITH** XT compatible Desktop Publisher PC, mono monitor, 32Mb hard disk, twin floppies, clock, Dos, manuals, etc. Excellent condition. £350. Call 0932 859425.

● **SELL** Atari portfolio, parallel interface, boxes, warranty, PC Link software and manuals for £150 o.n.o., 2 months old. Martin Watson. (0432) 267933. Wanted. Infocom Adventures for PC.

● **SHAREWARE** for PC. £1.25 per disk. SAE for list to Kevin Martin, Flat One, 28-34 New Road, Portsmouth, PO2 7RB.

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● **AMIGA GAMES**, very low prices, all unboxed, buy originals, be the first to get you hands on this amazing offer. Send SAE to M. Jacques, 8 Paisley House, Kershaw Street, Laisterdyke, Bradford, BD3 8PA for list.

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● **IBM COMPATIBLE**, 20Mb hard disk, 1-44K 31/2" drive, mouse, CGA adaptor. Free software, only £319.99. Phone 021-777 8808 Commodore 16, data recorder, leads, games, adaptor, clean and working, bargain at £24.99. Phone Mike 021 777 8808.

● **ATARI** portfolio with parallel interface and 32K datacard, £150. Also serial pageplus for Windows 3 latest version, £40. Contact John Darcy, 6 Marnabrae, Lisburn, N. I. (0846) 660646

● **AMSTRAD ALT 286** Laptop 4Mb RAM H/case, 4 months old. Cost £1700, accept £1100 o.n.o. Phone Mark (0705) 599248 after 6.30pm (home).

● **PC SHAREWARE** £1.25 per disk, for list send SAE to Kevin Martin, Flat One, 28-34 New Road, Portsmouth, PO2 7RB.

● **2 IBM COMPATS** main board both with 512K RAM PSU and mono cards, XT for £35 and AT for £50. Also Thermal printer, only £10 or all for £90. Phone Steve 0932 223548 after 6pm.

● **WANTED** Archimedes on BBC Master 128K computer for school child. Good price paid. Will collect, any condition considered if price is right. Telephone (0332) 830140 and ask for Mark.

● **AMSTRAD PC2086** mono monitor with 30Mb hard disk. Boxed and in very good condition. £600 o.n.o. Tel Ian on (081) 9585508 after 7pm. Edgware.

● **STUDENTS**: owns Torch Graduate G800/2 for BBC. Urgently need original manuals + software Dos 4, Hi-Res/ VGA colour monitor: Cheap Macintosh Desktop Fractal system, 31/2" 800K floppy with booklet. New unopened, £20. Ring Waseem. 021 784 2405 evenings.

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◆ PC

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● **APRICOT** F1 256K 31//2 FDD monitor, good for wp. £90. X1 512k, 31/2 FDD monitor, £90. Sharp MZ700 £35. MSX, £25. Part exchange and swaps considered. Wanted 1/2 length VGA card, wanted VGA mono monitor. 0480 75036 after 7pm.

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● **AMSTRAD 2286** 40 meg HD VGA colour monitor, mouse, Windows, 1 meg RAM, £500. Phone 051 427 9724 after 6pm or 0928 794614 (work). Andy.

● **COMMODORE 128** complete with leads, power pack, data cassette, lots of games, joysticks, and b/w TV. £65. Phone 081 948 3300.

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● Locoscript, Word Perfect, Mirror Comms, Tools Grammatick, Clip hard drive, 31/2" drive screen filter, colour monitor, offers or enquires. 0782 612393. Steve. Wanted Amiga hard drive.

● **AMSTRAD** CPC464, colour monitor and green screen monitor, disk drive, Multiface 2 printer, cable, dust covers, 40 disks, £450. Tape software, manuals, books, magazines, sell for £320 o.n.o. Tel (0723) 863412.

● **BBC** model B issue 7, DDFS 1.54T, solidisk, two meg, 256K, sideaid 256 40/80T disk drive, joystick, mouse, data recorder, plus loads of software and manuals. £450 the lot. Tel 041 776 4069.

● **SPECTRUM** 128K +2 for sale. PSU some games and books, can be temperamental, hence low price, but ideal for spares. £40 o.n.o. Tel James on Leicester 0533 666928 after six pm.

● **AMSTRAD 6128** for sale. Colour monitor, Multiface 2, over £50 worth of games, business and educational software, magazines and books, tape lead, manual worth at least £750. only £350 or offers. Buyers collect. Ring 051 625 8994

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● **MEMOTECH** MTX computer with green Philips monitor, cassette player, manual and software. To make an offer, phone 0634 829453 evenings or 0634 8726687 day.

● **AMSTRAD 6128** with colour monitor, ROMbox ROMS disks, books, utilities, including Money Manager and toolkit. £200. Also Amstrad 464 with green monitor with tapes, books, games, utilities, £80. Ring Stubbington. (0329) 661336 after 5pm.

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● **COMMODORE 16**, original cassette deck, cables, power supply U/S Atari 2600 + controller, Quickshot joystick, power supply U/S. £10 each or £15 both inc p+p. Tel 05512 3388.

● **COMMODORE 64**, 1541 disk drive, MP5801 printer, C2N tape player, tapes, disks, utilities, games, books, magazines, my whole collection. £200. Buyer collects (too much to post). Phone Dave Ports. 0705 552940.

● **COMMODORE** SX64 portable computer with built in floppy drive and colour monitor. Fully compatible with all CBM disk and cartridge software. Perfect working order. Bargain at £150, no offers. Phone 081 3952525.

● **AMSTRAD** DD-1 and interface plus 64K memory ex with software disks and blank software tape + disk. Bargain at £100, no offers, must go today suit 464 only. Phone Liverpool on 051 727 7523 anytime.

● **WANTED!** If you have a disk drive or printer for the C64, which is in reasonable condition and at a reasonable price, then I'm interested. Contact Lee Baker on (0444) 450 487. (Sussex) with any offers.

● **MULTIFACE 2** for any Amstrad CPC, excellent condition, superb for copying tapes to disk, pokes, cheats etc. Very usefull cost £40 four months ago, now only £20. Phone (0480) 61253. Huntingdon. Also 464 disk drive. £80.

● **SPECTRUM** 128+28 Light Gun, joystick, like new, original box, manuals, magazines, over £500 of magazines, only £165. Tel 0452 414638 evenings.

● **SAM COUPE** 256K, disk drive, PD disks, Spectrum games on disk, Planet Of The Robot Monsters. Tape recorder, all leads and manual +TV, sell for £160, without TV, £200 with or swap for ST Preston (0772) 683407, ask for Lee.

● **SAM COUPE** 256K with disk drive, printer interface etc. Plus Sam Tasword only £120. Glouster area. Phone 0452 505801.

● **WORKING** Amstrad CPC green monitor, faulty Atari 1010 tape and faulty Atari 1027 printer for sale. Also Magnum Light Gun and games. Phone Peter on (0752) 658708, best offer secured! Also CPC TV modualtor.

● **AMSTRAD** DD11 disk drive CPC 464 plus manuals, some disk games eg, Storm Lord, Rainbow Islands, Mini Office 2, blank disks, disk box. All for only £80. Absolute bargain. Also Multiface 2, £20. Phone (0480) 61253. (Huntingdon, Cambridge area).

● **AMSTRAD 6128** computer, colour monitor, built in disk drive, £500 of quality games, including Rick Dangerous 2, Turtles, Kick Off 2, Ghost Busters 2 and many more, with all manuals + 50 magazines. Bargain at £400. Tel (0275) 8511844.

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● **SPECCY** stuff, two microdrives, £28. Box 20 M/D carts, £22. Over 100 tapes from various speccy magazines, £25. (Over 200 games). Tel: 0377 70556.

● **SPECTRUM +2A** for sale, including PSU and leads, with manual. 26+ games, including Batman, Robocop, Indiana Jones, Trivial Pursuit, Live And Let Die, and many more. £110. Phone Andy on 0858 431606.

● **BBC** B-Plus 64K, boxed, with extra ROMS (1770 DFS, 051.2), £175. Acorn Prestel modem, £40. Send SAE for large software list (state disk cassettes, books). M. Poskitt, 38 Fambridge Drive, Wickford, Essex, SS12 9HR. (0268) 767107.

● **SPECCY** stuff, two Microdrives, £28. The Quill, £6. P.A.W., £12. Super Tool kit, £4. Large music keyboard, +software + interface etc. £35. (128K). 0377 70556.

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● **SPECTRUM +3** disk drive, tape recorder, all leads and manuals. £400 worth of software, Multiface 3, worth £600. Sell for £200. Quick sale. Phone 0327 60351.

● **SINCLAIR QL** with Cub colour monitor, Dot Matrix printer, 26 Microdrive cartridges, full of software, plus a number of books, joystick adaptor, excellent condition, hardly used, £150 the lot. Phone 0494 473 892.

● **FOR SALE:** C64C, disk drive, tape recorder, joysticks, power cartridge, over £450 of software, machine code programmers book. All in original boxes, will sell for £330 o.n.o. Call Steve: (021) 565 0273 after 5.30pm. (Birmingham area).

● **AMSTRAD CPC 464,** mono monitors, DDI-1 disk drive, £350 worth of software, including Gazza II, Edd The Duck, Turbo Outrun, two joysticks, loads of magazines. £300. Contact Christopher 0443 693087, Merthyr. Tydfil.

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● **WANTED** Expert cartridge for Comm 64. will pay £10. Also want support disks for replay/Freeze M. Also PD utilities. Phone Eric 091 2634866 or write with lists to 182 Rawdon Court, Wallsend, Tyne and Wear, NE28 6YJ.

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● **FOR SALE** Multiface 3, £35. +3 P.S.U., £39, or will swap for 48K hardware. Write to: John White, 16 Witcombe Point, Clayton Road, Peckham, London, SE15 5EH.

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EXPRESS SALES

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● **COMMODORE SX64** portable computer with built in floppy drive and colour monitor, fully compatible with all CBM64 disk and cartridge software. Perfect working order. Bargain at £150. No offers. Phone 081 395 2525.

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● **WANTED** for Commodore 64, Action Replay cartridge, must have instruction booklet. Phone 0606 559522.

◆ CONSOLES

● **SUPER FAMICOM** Scart, brand new. £230 with on game, Sega Master system, plus six games, £100 o.n.o. Megadrive Scart, £100 plus one game, other games £10 to £35. Phone Matt. 0403 60069 eves and weekends.

● **FAMICOM** + 2 games, £260. Also Scart megadrive + game. (Japanese). £160. Lynx + game. £130. Phone 0202 894309.

● **ATARI** Lynx for sale, complete with cal games and P.S.U., fully boxed, two months old and Comlynx cable included, will sell for £75. Phone (0763) 246322 after 5.30pm and ask for Neil.

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● **ORIGINAL C64 S**oftware on cassette for sale, from £1 to £15. Titles like Turrican 1 and 2 etc. Send SAE to Matthew Benham, 21 Romany Lane, Tilehurst, Reading, Berks, RG3 6AP. Tel 422033.

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● **WANTED** Amiga 500 base pack + mouse etc. No software required, 1 meg upgrade if possible, also no monitor/TV. Write 68 Abbotsleigh Road, South Woodham Ferrers, CM3 5SS or phone on 0245 320089 will pay upto £150.

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AMSTRAD CPC USERS - Tony Baker, United Amstrad User Gp, 26 Uplands Crescent, Fareham, Hants PO16 7JY. Tel 0329 234 291

AMSTRAD CPC HOME USERS – Steve Williams, WACCI, 9 South Close, Twickenham TW2 5JE. Tel 081-898 1090

AMSTRAD LOCAL GROUPS - Contact the Amstrad Groups Federation, 4 Sutton Road, Gorton, Manchester

AMSTRAD PC SOFTWARE - Colin Smith, Colbar, 10 Penwood cl, Westbury, Wilts BA13

AMSTRAD PCW - Bob Ellis "Rowan" 100 St Peters Close, Moreton-on-Lugg, Hereford HR4 8DW. 0432 761 860

AMSTRAD 1512/1640/PPC - PC Independent User Group, The Computer Advice Centre 87 High Street, Tonbridge, Kent. Phone 0732 771 512

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APPLE II USERS – tel 051 9284142.

APPLE MACINTOSH. John Lewis, Macintosh user group, Macintosh House, 11 South Parade, Summertown, Oxford OX2 7JL

APPLE SYSTEMS – Irene Flaxman, Apple 2000, PO Box 3, Liverpool L21 8PY.

ARABIC COMPUTING – Rich Lackey, Arabits, 9 Bellview road, Worthing, West Sussex BN13 1EY

ATARI ALL MACHINES – Colin Hunt, BaPAUG, Wimborne Road, Oakdale, Dorset BH15 3EF

ATARI AND ST PC EMULATOR SUPPORT CLUB – SAE to 153 Parrock Street, Gravesend, Kent, DA12 1ER

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ATARI ST DIY HDISK BUILDERS CLUB – information on how to build from scratch an HDisk system for your ST. Help given on what you'll need and how to connect it all up. Call 0495 272092

ATARI ST - Paul Glover, The ST Club, 9 Sutton Place, 49 Stoney Street, Nottingham NG1 1LX. 0602 410241

ATARI ST demos/PD wanted. If you can write demos or want exclusive titles. Write to ST Demos, 8 Bertelin Road, Beaconside, Stafford, ST16.

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B

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BASIC PROGRAMMERS' GUIDE – for all BASIC programmers. Phone Andy on 081-648 4326.

BATPUG – Turbo Pascal user group also open to other PC Pascal programmers. Costs £10 per year. Write to 12 Clegg Avenue, Cleveley's, Blackpool, FYS 9BJ. Send a Stamped Addressed Envelope for sample.

BOMB OUT BROS – A new ST PD coding group wants new members to help expand our range of games, demos and utilities. Write to Adrian Speight, 25 Gilbert Crescent, LLanelli, Dyfed.

BRIDGE CENTRE AMIGA CLUB – A club not just for Amiga users but anyone who wants to become familiar with the Amiga. All age groups welcome. Games, music and educational software. PD software £1. Me,mbership £3 a year and an additional 20p every Friday. Come to our meetings at the Bridge Centre, Haddington, East Lothian, Scotland every Friday.

C

C64 PD CLUB – E Masaba, 84 Garmoyle Rd, Liverpool L15 3JH

C USERS GROUP – Francis Glassborow, 64 Southfield Road, Oxfoed OX4 1PA. For everyone interested in the C and C++ programming languages. Publishes a bi-monthly newsletter.

CAMBRIDGE Z88 - Roy Woodward, Z88 Owners' Club, 68 Wellington St, Long Eaton, Nottingham

CD ROM - UK CD-ROM User Group, High Wings, Salem, Treforys, Abertawe 0792 844 370

CHESHIRE 16-BIT USERS CLUB – Amiga, ST, PC, Arc at Radley Common community centre, off Poplars Avenue, Orford, Warrington, Friday nights. All welcome. £1 admission.

CHESS COMPUTER PROGRAMMERS and interested players send an SAE to Steve Roe, 25 Nene Walk, Worksop, Notts or ring BBS 0909 479080

CHESHIRE NIMBUS USER GROUP – Geoff Nelder, Queens Park High School, Handbridge, Chester

USER GROUP LISTING

CHOICE – On-line help. Tel 0308 23224.

CHURCH ADMINISTRATION - Rev Stoker Wilson, Church Computer User Group, St John's Vicarage, Greenside, Ryton, Tyne & Wear NE40 4AA. 091-413 8281

CID (Computers and Integration for the Disabled) is a registered charity. Write to Gordon, Chelsea Road, Inverurie, Aberdeenshire, ABS 9QZ or tel 0467 24202

CLERGY/MEDICAL EDUCATION – Mr T Jones, FREE-ED Shareware/PD 85 Stoke road, Taunton, Somerset TA1 3EL. Tel 0823 321 481

CLEVELAND AMIGA CLUB – Thought our Amiga scheme should get organised. Tel 06542 252133 and ask for Barry or write to 30 Aske Road Middlesborough, Cleveland, TS1 4DA. No lamerss. Hope to start PD club and fanzine.

CLUB A3000 – The largest Archimedes User Group in London! Visit our second open day on Sunday 23 June. For more details please contact us on 081-445 2126.

CLUB AMIGA answers your questions on software and hardware on its 24 hour helpline. Join now. Send £5 to Club Amiga, 5 Bowes Lea, Shiney Row, Tyne and Wear DH4 4PP.

CLUB M – Monochrome ST user group needs members. Dedication, enthusiasm and a sense of humour are the only membership fees. Small ever expanding PD Library. Write to CLUB M, 59 Maple House, Idonia Street, London SE8 4LT.

COBOL LANGUAGE - Allen Reavie 22 Mourneview St, Portadown, Northern Ireland. BT62 3AW

COLECO ADAM - Keith Mamer, UKAS 33 Homer Road, Croydon CXR0 7SB

COMMODORE ALL MICROS - Jack Cohen, ICPUG, PO Box 1309, London, N3 2UT. Tel 081-346 0050 after 6pm

COMMODORE 64 CLUB has been on the go for the last five months and new members are welcome. For more details send an SAE to The C64 Club, 20 Finlow Place, Dundee, Scotland

COMMODORE AMIGA - UK Amiga Users Group. Contact 144 Charles Street, Leicester LE2 00D. Telephone 0533 510066 voice; 0533 517615

COMMUNITY COMPUTING - Community Computing Network 2nd Floor, 35 Pink Lane, Newcastle, NE1 5DW. Tel 091-261 0317

COMPUCORP. Compucorp University users group c/o Compucorp, Cunningham House, Westfield Lan, Kenton, Middx

COMPUNET – write to Independent Compunet Club, 148 Furzehill road, Boreham Wood Herts. WD6 2DX

CONFERENCING - Compulink, suite 2, The Scantuary, 23 Oakhill Grove, Surbiton, Surrey KT6 6DU Voice 081-390 8446. CIX BBS 081-399 5252

CPM & MSDOS Users Group – 42 Birkbeck Road, Wimbeldon, London SW19 9NZ. Tel 081-543 0824

CRYPTOGRAPHY & CODES - Mike Barlow, American Cryptogram Association 5052 Chestnut Avenue, Pierrefonds, Quebec HBZ 2A8 Canada

D

DATAEASE USER GROUP – High-Tech House, 10 Blackfriars Street, Norwich, NR3 1SJF

DISABLED - Jeff Hughes, Special Needs User Group, 39 Eccleston Gardens, St Helens WA10 3BJ 0744 24608

DESKPRESS USER GROUP – Is there one? Fancy starting one? If your answer is yes to either of the above, please write to me, Raymond Day, at 3 Hall Terrace, Willington, Crook, Co Durham, DL15 0QN.

DRAGON - Paul Grade, National Dragon Users Group, 6 Navarino Road, Worthing, Sussex or tel 0903 207585

E

ECONET - Michael Ryan, Econet User Gp, Balkeerie Cottage, Eassie by Forfar, Angus DD8 1SR

EDUCATION – Charles Shannon, TECUG, 35 Wellington St, Gravesend, Kent DA12 1JG. Tel 0474 567 931

EIGHT-BIT BACK-UP 8-bit user group for all. 25p plus SAE. to: 8-bit back-up, 1 Northolme Close, Grays, Essex.

EINSTEIN – Graham Bettany, UKEUG 80 Dales Road, Ipswich IP1 4JR

EINSTEIN PD USER GROUP – Help and advice for all Einstein users. Over 100 disks of PD software. Send SAE to SW Knowles, 23 Howldsworth Rise, Arnold, Nottingham, NG5 8HZ

ELITE PLAYER GROUP – Swap hints, tips, etc. Fanatics welcome. Beginners welcome. Write: Ian Hurst, 7 Perrybrook Walk, Ashton in Makerfield, Wigan, Lancs WN4 8TR.

ELMSOFT PUBLIC DOMAIN SERVICE for the ST any weekend at Camden canal market, Haven Street, London

EMULATE. For Amiga, Amex. Monthly newsletter. Write to Pat 12b Northbrooks, Halrow, N Essex

ENTERPRISE – William Creaser, 6 Provident Street, Shaw, Oldham, DL2 8AQ. Independent Enterprise User group. Tel 0706 881382

ENTERPRISE - Tim Box, Independent Enterprise User Group, 50 Holdenhurst Avenue, Finchley, London N12 0HX. Tel 081-346 8032

ENET (like Econet) - T K Boyd, Enet (Amcom) User Gp, Seaford Cottage, Petworth, West Sussex

EUG – The Acorn Electron User Group. "The ELK is not dead yet!" Send large SAE for details to EUG 134 Great Knightleys, Basildon, Essex ss15 5HQ.

EURO-PALS – Contact service. Make computer friends anywhere and everywhere. Send £4 to Julian Ross, 2 Bysouth Close, Clayhall, Ilford, Essex IG5 0XN.

F

FIND YOUR LOCAL CLUB – British Association of Computer Clubs. Database of all user groups in the UK. Banc y rhosyn, 14 Bron Y Glyn, Bronwydd Arms, Carmarthen SA33 6JB.

FORTH Language – Douglas Neale, FIG (FORTH Interest Group) UK, 58 Woodland Way, Morden, Surrey SM4 4DS

FRACTALS/CHAOS THEORY - Andy Lunness, 69 Bronte Avenue, Bury, Lancs BL9 9RN. Telephone 061-764 6469

G

GENEALOGISTS - Computer Group, Society of Genealogists, 14 Charterhouse Buildings, London EC1M 7BA. 071-251 8799

GENERAL HOME MICROS - Steve Winter, Chic Computer Club, PO BOX 121, Gerrards Cross, Bucks SL9 9JP 0753 884473

GEOS USER GROUP – for C64 and 128 owners. Disk based magazine. Send blank disk to GUG (UK) 110 Deansway, Woodloes Park, Warwick CV34 5DQ

GUG (UK) – GEOS User Group for C64/128. Also non-GEOS PD library. Send disk and return postage for GEOS, SAE for non-GEOS to GUG (UK), 110 Deansway, Woodloes Park, Warwick CV34 5DQ

GROUND FLOOR USER GROUP – support for all serious users of PC, ST, Amiga and PCW. Meets monthly in Calderdale, West Yorkshire. Further information from Jae on 0422 844991 days or 0422 845789 eves.

GUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX. Telephone 021-722 3168

H

HERCULES MACHINE? Enjoy drawing? Send your best pictures! Send SAE for details or send £1 and 5.25 inch disk for pictures. State program.

HOUSING ASSOCIATIONS - Caroline Maries, Micro Users Ltd, Beaver Housing society, 23 Lewisham High Street, London SE13. Tel 081-318 1126

HEALTH WORKERS - Sue Mckendrick, Healthlink, 164 Windsor Rd, Ashton-in-Makerfield, Wigan WN4 9ES. Voice: 0942 712 385

I

IBM PC USER GROUP – PO BOX 360 Harrow HA1 4LQ.081-863 1191 BBS 081-863 6646

INERTIA ADVENTURES – A ray of light in the dark cavern of the text adventure. Do you dare to enter this saga? Tel 0265 51851 for details.

J

JOMAC USER GROUP – Spectrum and Amiga tips and pokes sent every month. Write with SAE to Jomac's, Filey Grove, Rhodes Street, Hull

JUPITER ACE – John Charter, Jupiter Ace Forth User Group, 17 Spring Wood Close, Dunston, Chesterfield S41 8BS. Tel 0246 237555

L

LISKEARD AMIGA USERS GROUP – For tips, help and information exchange. Contact Phil Golding, 19 Pound Street, Liskeard, Cornwall PL14 3JR. (0577) 46217.

LOCAL AUTHORITIES – Local Authority Micro User Group, John New, Borough Engineer's Dept, Municipal Offices, North Quay, Weymouth, Dorset DT4 8TA.. Tel 0305 785101 ext 272

LOTUS PRODUCTS - Lotus User Group, 79-80 Peascod St, Windsor, Berks SL4 1DH. Telephone 0753 841686

LYNX – R B Jones, Lynx User Group, 39 Ashton Close, Needingworth, St Ives, Cambs

LYNX DISK USER GROUP – J Koushappas. 172 Pasteur Gdns, London N18. Tel: 081 807 3859

LYNX LINK – Cards bought and sold and exchanged. Lynx fanzine each month. Send SAE to Peter Terry, 32 Boma Road, Trentham, Stoke, Staffordshire, ST4 8EB.

M

MAC SOFT – six games for the Amstrad CPC6128. Send SAE, blank disk and 50p copy charge to Macsoft, 2 South Meade, Maghull, Liverpool, L31 8EF.

MAGNETIC MEDIA HANDLE WITH CARE – Amiga disk fanzine with news, reviews, music, games, utilities, userhelp. Each issue £2.80. Write to Magnetic Media HWC, 25 Rigbourne Hill, Beccles, Suffolk NR34 9JC.

MEGADRIVE CONSOLE CLUB – Used and new games sold, also exchange system and games brought from £6-£22. Write to Andrew Stanford, MCC, 15 Fields Park Drive, Alcester, Warwicks, B49 6QR or Tel: 0789 764039 after 4pm

MEMOTECH FILE – 93b StJohns Road, Biddulph, Staffs ST8 6LL

MEMOTECH - Phil Eyres - Memotech Owners Club, 23 Denmead Road, Harefield, Southampton SO2 5GS. Tel 0703 585106

MICRO-DESIGN USER GROUP – a new group for those PCW owners requiring assitance and advice with this DTP package. Large clip art library available. Phone Phil on 0709 543390

MID CORNWALL COMPUTER CO-OP – Atari ST. 8 Victoria road, Roche, St Austel, Cornwall PL 26 8JF. Telephone 0726 890473

MIDI/MUSIC – Spectrum music machine/MIDI user group. Magazine on tape, plus programs and lots more. For more details contact Sean Sanderson on 05242 62258

MOTOROLA 68xxx MICROS – write to Rick Applegate, 68 Microgroup, 8 Great Cob, Springfield, Chelmsford, Essex. BBS tel 081-316 7402

MSX SYSTEMS – write to Keith Neal, MSX Link, Austerby House, 80 Austerby, Bourne, Linconshire PE10 9JL

MUG USER GROUP – If you either play or run a multi-user game then write with details to the MUG User Group, 4 Garden Close, Penrith, Cumbria, CA11 7UD.

NEXT WEEK N-Z

SEXIST AD OF THE WEEK

The latest in our series of genuine ads culled from the pages of Shopping Express:

> DO AMIGA mad females exist? If so I'd like a penpal, age around 20 preferred, but not essential. Sense of humour a must! Please write to Adam Wright at 33 Great Holme Court, Thorpelands, Northampton NN3 1YD.

I don't know about Amiga mad, but there might well be a few mad female readers out there after reading that one! Watch out Adam, they have your address.

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THE PD COLUMN

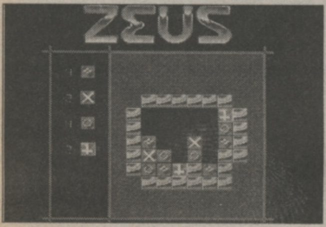
From a magazine on a disk to educational software for your kids, James Leach gets out and about around the country's Public Domain, bringing you the latest to hit the headlines

BLOCK BUSTER

People who write PD aren't often bothered about 'borrowing' ideas from others. ***Zeus*** is a new PD game for the Amiga from 17-Bit Software. It's fast, it's colourful and it isn't a million miles from an Ocean game of a few months ago called *Puzznic*.

Basically, you have to move different patterned blocks around inside a frame. When blocks touch others with the same pattern, they vanish (the idea being to get rid of all the blocks in the frame). It sounds easy, but the blocks tend to stack up very awkwardly, and when you get odd numbers of each pattern you'll really have to exercise the grey cells.

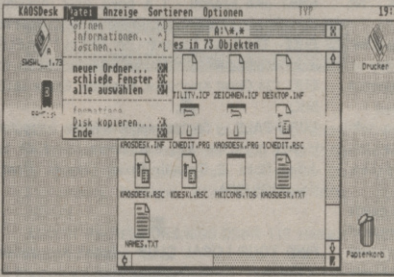
It's a brilliant, er, implementation of the Ocean game, but one thing mars it slightly – the mouse sensitivity is set far too high. Move the rodent a couple of microns and the pointer flips right across the screen. Apart from that, it's well worth seeking out.



• Plenty of *Puzznic*-related fun with 17-Bit Software's *Zeus*

ST DESKTOP

The South West Software Library has decided to take on the likes of ***NEOdesk*** and ***Harlekin*** with an ST desktop replacement of their own. It's called ***Kaosdesk***, but it's actually far from chaotic. It's very impressive indeed, and has a whole suite of features including customised icons (which look 10 times better than the boring normal standard desktop ones), file copy and delete dialogue boxes (as seen on TOS 1.4), keyboard shortcuts, menu bar clock and even useful functions like a graphical display of how much disk space has been filled on the horizontal scroll-bar.



• Bring your ST's desktop right up-to-date with *Kaosdesk* from the South West Software Library

Someone has obviously thought about this desktop, drawing on the best features of ***NEOdesk*** then adding extras which put it a nose ahead. For it's depth, the program is also surprisingly fast. ***Kaosdesk*** is so new that it hasn't yet been translated from the German, but the English version should be out soon.

If you can't wait for that, the South West PD Library also does a ***German to English Translator,*** which might help. It has a 3000 word dictionary, and will deliver any impenetrable Teutonic verbiage into good old understandable English, although SWSL points out that it hardly produces elegant prose. It's very useful as much ST PD and Shareware seems to originate from Germany.

USEFUL UTILITIES

Once you've set up your spanky brand new ***Kaosdesk***, you'll probably want some handy utilities to put on it. Nightshift PD has just the thing. It's basically a collection of the best ST

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U004) Visicalc Spreadsheet
U006) Intro Maker
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U015) The Magicians Utilities
U017) Steel Moon Utilities
U019) CADV
U021) Super C Disk
U024) Red Devil Utils 4
U026) Amibase V3.76
U031) Bootbench
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U056) Wordwright Wordprocessor
U058) Running Man Update
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U062) New Age Utilities
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U065) Fonts
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U069) XLS Best Of PD 3

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utilities brought together on one disk.

The idea is simple, but doesn't seem to happen often enough in the exciting world of Public Domain. The disk contains 13 Auto programs to customise your ST, a useful program called ***DC Stuffer***, which allows you to cram up to 32 desk accessories into GEM instead of the usual six, a graphics editor for the desktop and plenty of other little items to keep you amused during the dark watches of the night.

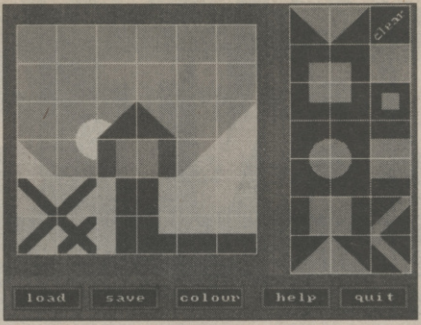
One of the most useful is a copy of ***VKiller***. This is a powerful virus checker and remover written by MUG UK. You can never take too many virus precautions, so it's always welcome to see virus killers on PD.

Staying with Atari ST PD for a moment, Jennix PD has re-released one of the best 'C' tutorials they say they've ever seen. Called ***Disk 139***, it certainly does look authoritative and if you can live with the fact that it's basically a large and technical book on a disk (and will ruin your eyesight forever), it'll tell you all you need to know about the high-level language.

ANGELIC EDUCATION

Educational PD software is on the increase everywhere you look, and of course the Amiga is at the forefront of this expansion. Déja Vu Software, which used to be known as the Amos Public Domain Library (before it changed its name by deed poll) has released a program called ***Arc Angel***. It only runs in 1Mb and shows kids how to create shapes by slotting them into a grid.

It's easy to use, pretty child-proof (as far as crashing when you hit all the keys at once is concerned) and is rather absorbing. Like all the best kids' software, things start of very simply, then gently ease the user into more and more complex situations, forcing him or her to use the recently picked up skills or knowledge to the full. And Deja Vu's program certainly does that. It's also bright, colourful and rewarding.



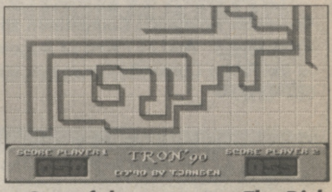
• From *Arc Angel* by Déja Vu Software comes this colourful, but simple shape-moving educational program

MAG ON A DISK

Frank O'Connor, my illustrious predecessor looked at a very early issue of ***The Disk*** several months ago. The disk is a magazine on a floppy for the Amiga set up by Steven Lord (under the title The Disk). It's now on issue four (covering August and September), and Steven assures me that the readership is increasing all the time.

It's not surprising because The Disk is a very well put-together piece of software. It has an editorial section known as 'Scribble Pad' (which justifies the title 'magazine on a disk', but it's also packed to the gills with other items such as (on issue four) an ***OctaMed*** (see PD Column *Express* 141) demo tune, a disk-label printer program, a powerful file cruncher, a disk drive speeder, a clock and a couple of fonts for ***DPaint***.

There are a couple of rather fun games as well. One is called ***Mr Munk*** and the other is ***Tron***. Yes, it's that old 'zip around leaving a trail behind you' chestnut, first seen in the Disney film of the same name. After all this time it's still great fun, and the two-player mode will lose you friends faster than halitosis. The whole caboodle costs only £1.50 per issue, and is bi-monthly. Well worth it. ■



• One of the games on *The Disk* (issue 4) is *Tron*. It's a good version of the oldie. *The Disk* is available from Steven Lord

WHERE TO GET IT IF YOU WANT IT

For Amiganuts go to:
160 Dale Valley Road,
Hollybrook, Southampton
SO1 6QX

For the 'C' tutorial and other helpful items, contact Jennix PD at 66 Abbey Road, Strood, Rochester, Kent ME2 3QB

All those luscious utilities available on ST from Nightshift PD, 8 Bertelin Rd, Beaconside, Stafford ST16 3JJ

Zeus **for the Amiga can be obtained from 17 Bit Software, PO Box 97, Wakefield WF1 1XX**

And Déja Vu Software (previously Amos PDL) for educational Amiga software. It's at 25 Park Road, Wigan WN6 7AA

The Disk **is available from Steven Lord, 6 Stubbing Brink, Hebden Bridge, W. Yorks HX7 6LR**

The rather funky *Kaosdesk* is available from South West PD Library, PO Box 562, Wimbourne, Dorset BH21 2YD

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THE EVENT HORIZON

What's going down, who's doing it and with whom! Well don't you want to know? This page has a complete listing of all major events, plus the juicy gossip you've all been dying to hear

THE PLACES TO BE . . .

Making the Difference
Now - Tue 31 Dec
At the Science Museum, London. Info: 071 938 8080.

Computer Animation Competition and Exhibition Wed 21 - Wed 28 August
At the Amiga Centre Scotland. Info: 031 557 4242.

PLASA Light & Sound Show
Sun 8 - Wed 11 Sept
At Olympia, London. Info: 071 3708174.

Leeds Computer Extravaganza
Fri 13 - Sun 15 Sept
At the New Exhibition Centre, Leeds University. Info: 0532 677 657.

CP/M & MSDOS User's Group
Sat 14 Sept
At the Spring Lodge Community Centre in Witham. Info: 0376 517496.

Business Computing '91
Tue 17 - Fri 20 Sept
At the Earls Court Exhibition Centre, London. Info: 071 486 1951.

International Police Exhibition and Conference '91 Tue 17 - Thu 19 Sept
At London's Barbican Exhibition Centre. Info: 081 995 7700.

The Works of Charles Babbage
Thu 19 Sept
Lecture at the King Edward VI College, Totnes at 14.15. Info: 0803 863821.

Effective Management of Information Technology Security Conference
Mon 7 - Tue 8 Oct
At the Forte Crest Regents Park Hotel, London. Info: 071 5871117.

Computers Count Tue 8 - Thu 10 Oct
At Totnes Civic Hall. Info: 0803 863821.

Business Communications Awards
Thu 10 October
At the Savoy Hotel. Info: 0800 800 847.

Charles Babbage's Impact on Modern Computing Wed 23 Oct
At the Science Museum, London at 17.30. Info: 071 9388196.

Image Processing '91
Tue 29 - Thu 31 Oct
At Birmingham NEC. Info: 081 868 4466.
System Builder Wed 30 – Thu 31 Oct
At Sandown Exhibition Centre, Esher, Surrey. Info: 0822 614671.

Computer Graphics '91
Tue 5 - Thu 7 Nov
At the Alexandra Place, London. Info: 081 868 9933.

Desktop Cad '91 Tue 5 - Thu 7 Nov
As above.

Open Systems 91 Wed 6 - Fri 8 Nov
Olympia, London. Info: 0784 472200.

All Micro Show and Radio Rally
Sat 9 Nov
Bingley Hall, Stafford. Info: 0473 272002.

Computers in the City
Tue 12 - Thu 14 Nov
At the Barbican Centre, London. Info: 081 868 4466.

World of Commodore Show
Fri 15 - Sun 17 Nov
A show for all things Commodore, , presented by the *Amiga Format* team. At Earls Court, London. Info: 0462 420785.

The Next Generation: Computing with Light Thu 21 Nov
Lecture at the King Edward VI College, Totnes. Info 0803 863821.

Vision and Reality
Thu 28 - Fri 29 Nov
A conference on multimedia at Jaarbeurs, Utrecht, the Netherlands. Info: +31 (0)70 3560666. ■

The Insider...

This week it's a Publishing Industry special and here's a tasty little morsel to kick off my scurrilous scrapbook in fine style

PICTURE THIS...

A well known managing director of a computer title publishing company invited one of his top underlings to a Korean restaurant to dissuade him from taking up a position with a competitor. Not that Korean food has any magical properties in this respect mind you. Anyway, the two execs are sat there and up pops the waiter and puts two bowls of appetisers on the table.

Although looking suspiciously like twigs, they tuck in to the morsels only to find two minutes later that the waiter brings a plate warmer, places it over the bowls, and lights the twigs! Laugh? – they were nearly sick.

BOYS NIGHT OUT

And talking of restaurants, Mirrorsoft recently took out the boys from EMAP Towers, publishers of ACE, CU Amiga et al, to a Vietnamese restaurant to 'further cement relations' - what is it about South East Asian food that is meant to impress?

Anyway the assembled hacks decided to launch into the 'let's see who can drink the most booze' routine and one luckless lad was the victim of a cruel hoax. He was the only one drinking alcohol – the rest having substituted water for the harder stuff – various Eurofizz lagers, actually.

Hours later, said young hack leaves restaurant, calls taxi, is sick down taxi driver's neck, dumped on the pavement and goes to sleep in shop doorway. Next morning he awakes in the company of an ageing erm... gentleman of homosexual persuasion in a disused building. The rest, as they say, is his story.

However, it does manage to totally eclipse EMAP's former world drinking record in which a well-known journo-star actually passed out while being introduced to Richard Branson and was escorted from the party replete with stomach pump.

VANISHING ACT

Yes you get some funny types in this business. Like the UK computer journalist who's disappeared without trace in the last couple of weeks.

Nothing especially strange about that you might think except for the fact that something like £10,000 of review equipment seems to have disappeared along with him!

THE BOTTOM LINE

The final little snippet concerns our very own Dr. Clare Anthony.

After being described as a 'part-time streaker and belly dancer' in these illustrious pages, the good doctor was appalled to receive several phone calls inviting her to a top London hotel for some 'special counselling'.

After threatening the caller with the verbal equivalent of a frontal lobotomy, Dr.Clare hit the roof when the cheeky chappie faxed her a picture of his bottom!

Golden Moments

A look back into the history of computing with *Express*. If it happened we reported it first.

ONE YEAR AGO

- The US army was researching into the uses of computer viruses in warfare. They were concerned that viruses would suffer from the same flaw as their biological counterparts – they would be unable to distinguish civilian or allied targets from the enemy. Strange that the authorities use the law against those creating viruses, yet endeavour to create them themselves.

- After an over-zealous report in the *News of the World*, mail-order outfit Shareware 1990 withdrew its game *Bad-Bad* from the market. It was a maze game, with a plot involving a hero eloping with his teenage bride-to-be. The newspaper story turned this into a 'Child Porn' shock-horror story and a Tory MP managed a typically uninformed comment.

- The US Treasury department nearly pushed through a law banning desktop publishing. It was worried about counterfeiting, and compiled a hasty bill which proposed the outlawing of anything which could be used for counterfeiting. Fortunately, the bill was amended to something more sensible.

TWO YEARS AGO

- A Japanese game was withdrawn after protest from women's groups. Entitled *Rape*, the game put the player in the position of chasing a woman through a car park with one thing on his mind. It must be only a matter of time before the release of *Baby Eater*.

- Humans 4, computers 1 was the score at the Computer Olympiad. Despite being able to beat the average human player with ease, the best programs still have a long way to go before they can beat the grand masters of Chess, Draughts, Backgammon and Scrabble. But they did win a surprise victory in the bridge competition..

- A New York based company named itself 'Big Blue', the nickname often given to IBM, after realising that it had not been registered as a trading name. In the past IBM had been reticent to acknowledge the name, but it took a possessive attitude to it and asked the New York company to find another.

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  - New Computer Express
  - Amiga Format
  - ST Format
  - Amiga Power
  - Amiga Shopper
  - PC Plus
  - PC Answers
  - 8000 Plus
  - Your Sinclair
  - Commodore Format
  - Sega Power
  - Classic CD
  - Needlecraft
  - Mountain Biking UK

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If that sounds like you, write a letter of application, a CV and either samples of published work or 500 words on Why Computers Need Magazines, and send the lot to Steve Carey, Publisher, *New Computer Express,* at the address below.

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- **Britain's fastest-growing publisher**
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ST Format, Amiga Format, PC Plus, Commodore Format, PC Answers, Amiga Power, Amiga Shopper, 8000 Plus, New Computer Express, Amstrad Action, Your Sinclair, Sega Power, Needlecraft, Classic CD and Mountain Biking UK

Do you know your bits from your bytes? Can you tell a microchip from a McCain's oven fry? Do you know how to spell? Future Publishing, Britain's fastest-growing publisher, is looking for a talented and enthusiastic writer to join the team of *ST FORMAT.*

ST FORMAT is Britain's biggest-selling magazine for owners of the Atari ST with a monthly circulation of over 70,000 readers, so you need to have:

- a working knowledge of the ST scene
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MULTIGEM MOVES IN

Multi-tasking GUI's are fast becoming standard for modern computers, but the ST is left slightly out in the cold. Until now – MultiGEM brings ST users a faster and more flexible way of using their machine. Nial Grimes moves around his desktop with lightning speed...

PRODUCT: MultiGEM
COMPATIBILITY: Atari ST/STE/TT
FROM: Grey imports
CONTACT: Scotsoft International,
47 Auchingane, The
Tryst, Edinburgh

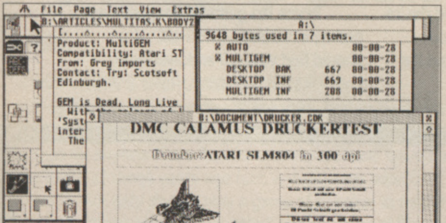
With the release of Windows 3 on the PC and more recently System 7 on the Macintosh, multi-tasking graphic user interfaces are fast becoming the standard for modern computers. The ST has been sadly lacking in this area, having only limited multi-tasking abilities in the form of desk accessories.

Recent visitors to the *Cebit 91* show in Hanover were stunned to hear of the imminent release of MultiGEM – claiming to offer, at long last, a multi-tasking GEM environment for the ST! But how does it stand up against the competition ?

MULTIGEM IN ACTION

MultiGEM is compatible with any ST system, colour or mono, providing it has TOS 1.2 or greater. Taking up only 88K, it will theoretically run on any memory configuration, although one megabyte or more of RAM is needed for serious work.

The package also supports 68020 and 68030 upgrade boards. Prompts in the installation program are in German, but all are accompanied by icons, meaning no knowledge of the language is necessary. Rebooting your ST will install MultiGEM in memory and a few seconds later you will find yourself at the familiar GEM desktop – the only visible difference being that the accessory 'slots' are filled with 'MultiGEM Slot'.



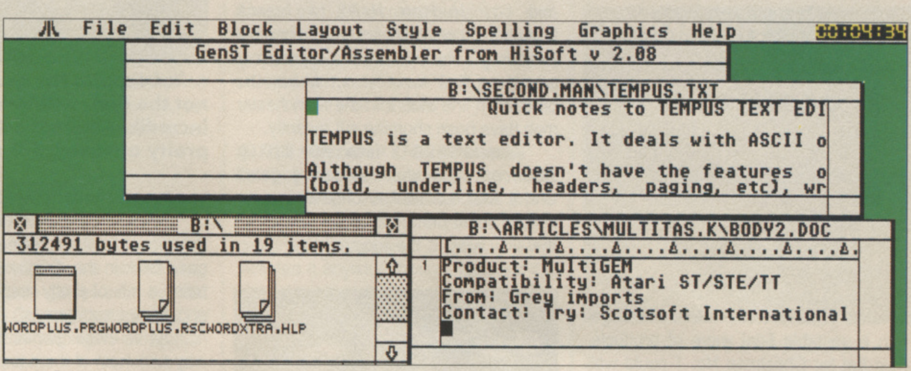
```
B:\ARTICLES\MULTITAS.K\BODY2
Product: MultiGEM
Compatibility: Atari ST
From: Grey imports
Contact: Try: Scotsoft
Edinburgh.

GEM is Dead, Long Live
```

```
A:\
9648 bytes used in 7 items.
  AUTO                  00-00-78
  MULTIGEM              00-00-78
  DESKTOP  BAK     667  00-00-78
  DESKTOP  INF     669  00-00-78
  MULTIGEM INF     208  00-00-78
```

```
B:\DOCUMENT\DRUCKER.CDK
```

• ***MultiGEM multi-tasking** Calamus* **DTP,** *First Word Plus* **and the GEM desktop**



```
GenST Editor/Assembler from HiSoft v 2.08
```

```
B:\SECOND.MAN\TEMPUS.TXT
                Quick notes to TEMPUS TEXT EDI
TEMPUS is a text editor. It deals with ASCII o
Although  TEMPUS  doesn't have the features  o
(bold,  underline,  headers,  paging, etc), wr
```

```
B:\
312491 bytes used in 19 items.
WORDPLUS.PRGWORDPLUS.RSCWORDXTRA.HLP
```

```
B:\ARTICLES\MULTITAS.K\BODY2.DOC
1 Product: MultiGEM
  Compatibility: Atari ST/STE/TT
  From: Grey imports
  Contact: Try: Scotsoft International
```

• **MultiGEM is multi-tasking** ***Tempus, First Word Plus, Devpac 2*** **and The GEM desktop**

VISIBLE DIFFERENCES

It is only when you begin to run GEM programs that the differences between GEM and MultiGEM become apparent. Running a program no longer closes the window it was run from. Instead the program loads leaving the desktop window open, this means you can run another task from within the first! Up to six tasks can be loaded at any one time. Switching between programs is simply a case of activating the needed window, at which point the menu bar will change to that of the activated task. If no window is open in the required program, it can be selected from an accessory slot.

Clicking on an empty slot will select the GEM desktop. When a program is run, MultiGEM makes an intelligent guess as to how much memory the task will need. Of course, this is not always correct – your desktop publisher will need more memory than your word processor, for example. It is for this reason that a configuration program is supplied to allow you to dictate how much memory is allocated for particular programs.

The default file contains information for popular programs such as *Calamus, Gemini* and *First Word Plus.* The GEM desktop Show/Print operation just doesn't fit in with the new multi-tasking ST. Thankfully Maxon has included a fully windowed text display program on the MultiGEM disk and clicking on a non-executable program will automatically run 'List'. This is particularly useful for packages that come with documentation on disk, as it is possible to have both the program and the documentation simultaneously on screen.

For those with an interest in the internal workings of MultiGEM a section in the manual is dedicated to answering any questions you may have. Unfortunately this, once again, is in German.

SHADES OF APPLE?

In action MultiGEM cannot be faulted. Most major packages are compatible and are greatly enhanced by being able to co-exist with other programs. Packages tested include *Calamus, Script, First Word Plus, Tempus, Gemini, Timeworks DTP, Proxima* and many more. Most presented no problems whatsoever. That said, some packages are bound to be incompatible so check with your supplier that the packages you want to use have been tested.

Those concerned by the prospect of losing six lots of data instead of one during a system crash need not be worried. A crash in the active task does not affect any of the other programs in memory. One problem with the system is that it occupies the accessory slots meaning for every accessory you have loaded, one less task can be run. All things considered, for the flexibility on offer this is a small price to pay.

MultiGEM is an excellent package. In terms of usability the package brings the ST into the realms of the Macintosh, and in many ways is very similar to Multifinder. Switching between tasks soon becomes second nature and after a few hours using the package, you will not want to live without it.

All we can hope is that Atari sees its potential and bundles it with every ST sold !! ■

DOES THE OPPOSITION PUT UP A GOOD FIGHT?

Many attempts have been made to persuade the ST to multi-task, ranging from Public Domain utilities to commercial programs. These include:

Twist (Hi Soft , £29.95) probably the best and most reliable of the bunch, allowing up to 14 programs in memory. Although only one program is allowed on screen at any one time there is a rather nice scroll when tasks are switched.

Switcher (Public Domain, about £3). Without a doubt the cheapest option. Functions best on monochrome STs and allows up to two tasks in memory. Has a tendency to get confused with file paths when programs are switched.

Revolver (Power Computing, £29.95). A novel idea. Instead of more than one task being stored in memory, all inactive programs are stored on disk. A large hard disk is essential for serious work.

Although functional, all previous efforts have been fundamentaly flawed by not allowing more than one program on screen at the same time and not using the GEM system to the full. This makes MultiGEM unique in its field.

VERDICT BOX

FOR

- ▲ **It works!**
- ▲ **Compatible with most GEM programs**
- ▲ **Makes full use of the GEM windows.**

AGAINST

- ▼ **Price**
- ▼ **Memory hungry**
- ▼ **German prompts**

COST: £99.95
VALUE: Super

Games Week

It's the pages you've been waiting all week to read – Stuart Campbell comes in spinning with the latest releases and licences to hit the screens

STAR RATINGS

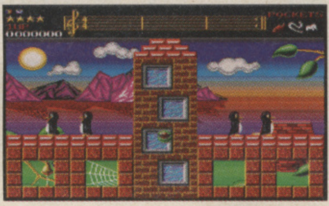
★★★★★ = 2000AD
★★★★ = Toxic!
★★★ = The Beano
★★ = Tom and Jerry Monthly
★ = Computer And Video Games

OCEAN BLUE

Yes folks, Ocean is just a little bit down in the dumps at not having had any games at the top of the charts for a good few months now, although there's a very good reason for that in that it hasn't actually released anything very much in the last few months.

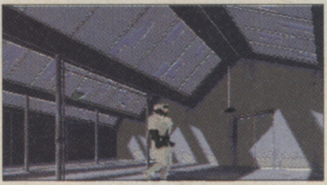
It's all set to put that right in the lucrative autumn-winter months though, with a veritable tidal wave of products. Best bet for Christmas No. 1 could well be ***The Simpsons***, the cartoon licence that's already available to purchasers of the 1 Meg Amiga Cartoon Classics pack, but will be out for the normal machines shortly.

Then there's ***Wizkid***, the long-awaited follow-up to ***Wizball***, which is looking even more bizarre than the slightly surreal original. Movie conversion fans (are there still any out there after ***Nightbreed***, ***Total Recall*** and ***Navy Seals***?) will be simply dying to rush out and buy ***Hudson Hawk***, a licence featuring Bruce Willis And His Incredible Receding Hairline in a platformy adventure that looks a cut above the production-line stuff that the Manchester mob have been churning out recently.



• *Wizkid* promises to be a bizarre follow up to *Wizball*

Meanwhile 3-D fans will lap up ***Robocop 3***, a stunning-looking game with a real feel for the original film, as well as some pretty incredible (if a bit on the slow side at the moment) animation of a huge ***Robocop*** character.



• *Robocop 3*, the game that is, not the film, will feature some incredible animation and some pretty amazing 3-D graphics

Finally on the cinematic side, there's the almost-finished ***Terminator 2***, which goes back in the direction of ***Batman*** in being a mix of pretty respectable driving and fighting sub-games.

All of these games are well under way and most of them are looking pretty good, so it looks safe to tentatively say that Ocean is on the way back after a lean period (both in quality and quantity terms) which was beginning to worry even their staunchest fans. About time too, that's what I say.

NEED A CHALLENGE?

Gremlin's sequel to the much-acclaimed (and rightly so) ***Lotus Esprit Turbo Challenge*** loses a word from its title, but gains lots of new features, including a three-player option (via an extra machine), a more varied selection of cars to drive (ie, two instead of one), and most strikingly, a whole slew of weather conditions to drive through, from snow and rain to the incredibly impressive fog sequence.

While there's quite a while to go yet before the finished thing is available, it's already looking excellent, with gameplay that's if anything even better than the original (how rarely we get to see that these days). For fans of high-speed rollercoaster driving thrills (me included), this could well be THE release of the autumn.

HERE IT COMES AGAIN

This week: FALLING AND LAUGHING

Since ***Miner 2049er*** more years ago than I care to remember, people have bought platforms-and-ladders games. In fact, there was once a time when every other game released would be yet another attempt at a ***Manic Miner*** clone, a habit which persisted right on into the first couple of years of 16-bit dominance and reached a peak recently with ***Switchblade 2***. Still, all those years of imitation and tribute should have left software houses with a rich seam to plunder for the ever-growing re-release market. Let's take a look at a few...

IMPOSSAMOLE **• GBH**
• £7.99 16-bit • £3.99 8-bit

One of the most enduring characters in platform gaming history is Monty Mole. Appearing first in an eponymous game which only stood out from ***Manic Miner***

TOP 10
ALL FORMATS FULL PRICE

WEEK	WEEK	TITLE	PUBLISHER	MACHINE
1	1	*Man United Europe*	Krisalis	SP CO AM ST AG
2	2	*Hero Quest*	Gremlin	SP CO AM ST AG
3	3	*Rainbow Collection*	Ocean	SP AM ST AG
4	4	*Dizzy Collection*	Codemasters	SP CO AM
5	5	*Teenage Mutant Hero Turtles*	Mirrorsoft	SP CO AM ST AG OT
6	17	*Lemmings*	Pysgnosis	ST AG OT
7	7	*Monkey Island*	US Gold	ST AG OT
8	21	*Eye of the Beholder*	US Gold	AG OT
9	11	*Super Monaco Grand Prix*	US Gold	SP CO AM ST AG OT
10	9	*Big Box*	Beau Jolly	SP CO AM ST AG

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible SP = Spectrum CO = Commodore 64 AM = Amstrad OT = Other.
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.

DAYS OF THUNDER • Mindscape

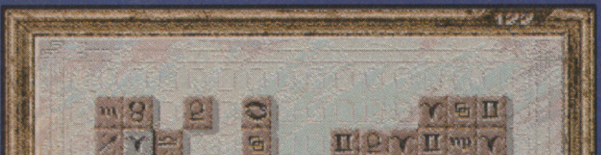
PLAYING TIPS

If, for some strange and perverted reason, you have the unfulfilled desire to play this game more than you absolutely have to, you may find the burden eased slightly by this tip.

Pause the game while qualifying and type' COMEFLYWITHME'. You should find yourself endowed with

SARAKON

Leisure Genius • Amiga, ST, PC • £xx.xx ★★★★



If you're expecting just another clone, you're in for a bit of a Shanghai surprise...

Shanghai seems to be the in thing right now. Every week brings a new PD version out of the woodwork, Activision's official sequel is well on the way and due soon, and now Leisure Genius (through Virgin) has come up with this neat little variant.

Sarakon presents you with a screen full of stacked tiles of various designs, which you have to clear from the screen by removing like pairs. So far so, um, exactly the same, but in *Sarakon* the difference is that the two tiles you remove have to be not only matching and individually moveable, but also connected by an invisible line with no more than two corners in it (er...), which makes this rather more of a brainteaser, especially as it comes complete with some fairly stringent time limits.

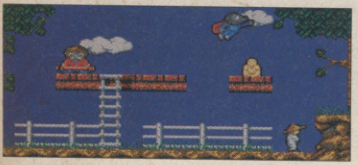
It's the easiest thing in the world to actually play, but clearing more than a few levels will test the keenest of eyes, the calmest of natures and the quickest of reactions. If there's a quibble, it's that on the later levels some of the different tile patterns are actually disturbingly similar, but you soon get to recognise the different types at a glance, leaving you with no excuse when you fail embarrasingly to clear a level yet again.

Sarakon also features a nifty little bonus game which breaks up the action nicely without being intrusive or overlong, and adds a little more value to what is already a great game. While you're waiting for *Shanghai II*, snap this one up.

TOP 10 ALL FORMATS BUDGET

THIS WEEK	LAST WEEK	TITLE	PUBLISHER	MACHINE
1	1	*Shinobi*	Mastertronic	SP CO AM ST AG OT
2	2	*Bubble Bobble*	Hit Squad	SP CO AM ST AG OT
3	3	*Magic Land Dizzy*	Code Masters	SP CO AM
4	4	*Double Dragon*	Mastertronic	SP CO AM ST AG OT
5	9	*Quattro Cartoon*	Code Masters	SP CO AM
6	18	*Renegade 3*	Hit Squad	SP CO AM ST AG
7	8	*Untouchables*	Hit Squad	SP CO AM ST AG
8	6	*Dragon Ninja*	Hit Squad	SP CO AM ST AG
9	16	*Treasure Island Dizzy*	Code Masters	SP CO AM ST AG
10	14	*Multimixx Golf*	Kixx	SP CO AM

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible SP = Spectrum
CO = Commodore 64 AM = Amstrad OT = Other.
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.



• Not so much impossible as unbearable...

et al by having an Arthur Scargill sprite at the end (which got the game on to *News At Ten* at the time, would you believe?), Monty survived through a series of sequels of varying quality before arriving for a triumphant comeback in the hands of Core Design, celebrated programmers of the enormous 16-bit platform hits ***Rick Dangerous*** and ***Rick Dangerous 2***.

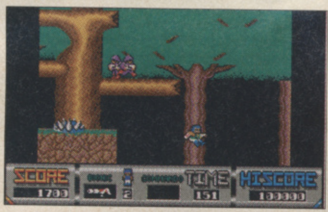
How could such a magnificent meeting of, er, minds possibly fail? Easy. By producing a game as completely rotten as this one. ***Impossamole*** featured Monty in an ill-judged superhero guise, and combined all the worst features of the Rick games with a beat-'em-up element so dire and out-of-place that Monty almost made it on to *News At Ten* again as armies of outraged game lovers besieged Gremlin with stones and petrol bombs in protest at the sullying of their beloved character.

The only bits of ***Impossamole*** which weren't maddeningly crap were the bits which were too boring to get worked up about, and the game crashed deservedly into the gutter. Now, shame-faced, Gremlin is trying to palm it off again at a price which is closer to, but still considerably above, it's true value. Don't be fooled. ★

***BIONIC COMMANDO* • Kixx**
• £7.99 16-bit • £4.99 8-bit

CapCom's corking coin-op climbing classic (sorry) wasn't one of the most widely-seen arcade games ever, but that didn't worry US Gold as it set out to bring it to the less-than-gasping-in-anticipation gamesplaying public.

Mind you, when it did, the finished product brought more than a few plaudits its way, and deservedly so, because it was one of the more successful coin-op-to-8-bit conversions ever, maintaining all the playability of the original while being mindful of the limitations of the host machines.



• Should this game ever have come down from the trees?

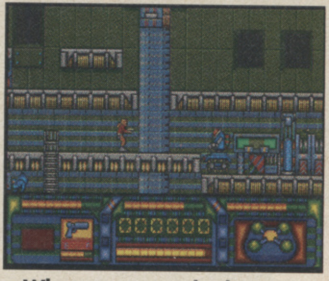
All the good work went out of the window, though, when flushed with this success USG decided to carry on and bring the game to 16-bitters too. The 'limitations of the machine' concept went flying as the programmers introduced an absurd juddery push-scrolling system and in the process made the game almost entirely unplayable.

Great music wasn't enough to save it, and I can only put the good reviews it still managed to get down to drugs, bribery, or both. For £5 with two other CapCom games, 8-bit owners can get themselves a real bargain here, but Amiga and ST punters would be well advised not to touch this with a 30-foot long bargepole dipped in Dettol and covered in condoms. 8-bit versions ★★★★ 16-bit versions ★

***STRYX* • Sizzlers • £7.99 16-bit only**

To be fair to Psygnosis (for it is responsible for this latest addition to the re-release label clan), this isn't just a platforms-and-ladders game. I've included it anyway, though, because the platform action which makes up the first and biggest part of it is so unbelievably appalling that very few people will ever bother to progress as far as the more shoot-'em-uppy sections which the game also features.

Your anonymous little sprite trudges aimlessly around some identikit scenery, taking the odd potshot at big, but lifeless, enemies with his ineffectual little gun, and it took me about as long to get utterly bored with it as it does for Jimmy Hill to annoy a Scotsman. Really, from a major-league outfit like Psygnosis, you'd think professional pride in some of its truly great games would prevent it blackening its good name with terminally terrible tommyrot like this, but it would seem not to be the case. Releases like this are a great excuse to start saving up for Christmas. ★ ■



• What most people don't realise is that *Stryx* actually features a shoot-'em-up section mainly because they fall asleep long before they reach it!

ATOMINO

• Psygnosis • C64

What, again? Ah yes, but THESE level codes are for the C64 version of this element-shuffling puzzler.

10 - MAIL
30 - LEFT
20 - MORE
40 - KISS
50 - TIME
60 - FLIP
70 - COOL
80 - FREE
90 - WAVE
100 - DOOR

DINOSAUR CORNER

No Hatstand this week, irrelevance fans, but rest assured your favourite column of tangential trivia will be back in seven days' time. For a change though, this week I'll be taking a not-so-retrospective look at a machine you may have thought was dead and buried.

Do you have a guilty secret? Are you scared to let your friends look on top of your wardrobe? Do you always stop your mum from cleaning underneath your bed, lest she might stumble across...the Acorn Electron?

The BBC Micro's baby brother sold many thousands of units in the heyday of the 8-bits, but now it's confined to the dumper of history alongside the *Elan, Jupiter Ace, Sord M5, Dragon 32* and all the rest. Or is it?

Surprisingly, no. Anyone who's played *Audiogenic's recent* much-touted *Exile* might be more than a bit shocked to discover that Electron owners beat them to it several months ago.

Then they'd be quite stunned to learn that Elk fans can also buy Infogrames' incredible *Sim City*, and not a little taken aback on hearing that *Pipe Mania, Last Ninja 2, Klax* and many more popular recent hits are also available on this venerable machine.

Mainly responsible is veteran software house Superior Software, which has licensed and programmed the Acorn versions of these and other games. It seems a shame that so few people will have heard of these excellent conversions, so if you've got an old Electron gathering dust in the attic, why not fish it out, call Software Bargains on 0532 436300 (for 'tis they who sell these very games) and surprise yourself?

BEG, BORROW AND BURN

BEG

JIMMY WHITE'S WHIRLWIND SNOOKER • Virgin

Hitting the shops in a matter of seconds, Archer MacLean's first major product since the legendary *IK+* is also one of the best games by *anyone* since the aforementioned beat-'em-up wowed the world all those years ago (can it really have been five years?). Not only does it play a game of snooker to rival the great Mr. White himself, but JWWS boasts some of the slickest and most impressive presentation in the history of the 16-bits. All of Archer's games are programmed with tender loving care, but the zooming, swooping 3D and little hidden gags concealed in here make this the game he'll be putting at the top of his CV from now on. Stunning.

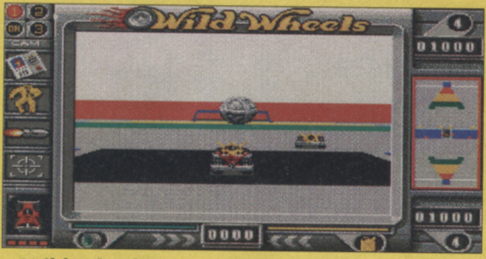
BORROW

THE EXECUTIONER • Hawk

Thrust is one of the all-time classics of computer gaming, so it's perhaps surprising that it hasn't spawned more imitators. This version combines the traditional tense precision gameplay with a tasteless and superficial torture sequence and a largely unnecessary strategy element, but it may be that the Thrust gameplay itself is enough for some people. Mind you, it's a shame that in this case even that's been spoiled to some extent by the lack of keyboard controls, but don't dismiss The Executioner until you've had a look, at least.

BURN

WILD WHEELS • Ocean



• Wild Wheels - I wouldn't say it was dull, but let's face it, I wouldn't be lying if I did...

3D soccer-style games have an unhappy history on the 16-bits (Street Hockey and Stormball being just a couple of the worse efforts), and Wild Wheels isn't the game to change any of that. Dull graphics, unhelpful and confusing views, and gameplay thinner than Karen Carpenter drag this game right down, and while it IS slightly more playable than most of the flops which have preceded it, that still makes it about as playable as a piano with the lid nailed down. Strictly for those with more pound notes than braincells.

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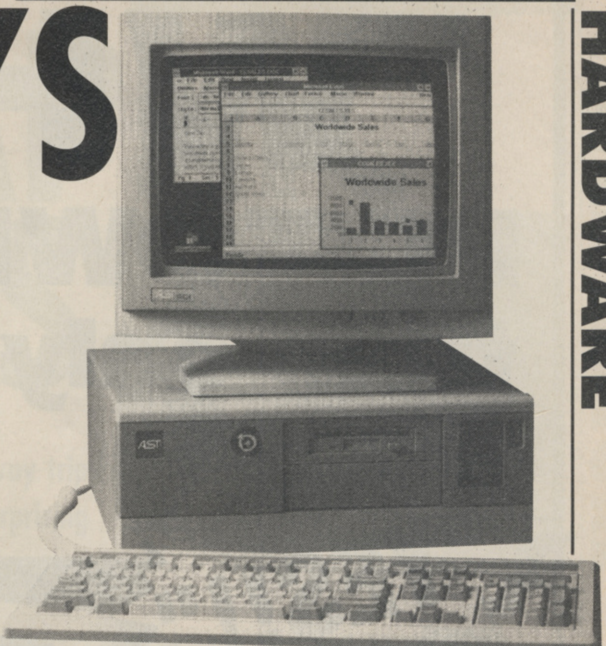
BRAVO 286/386SX

THIS YEAR'S MODEL?

There are so many PCs available at the moment that any new models have to be special to succeed. Tim Howell sees if AST's Bravo 286 and 386SX have that certain something which deserves applause



PRODUCT: AST Bravo 286/16
and Bravo 386SX/20
COMPATIBILITY: PC
FROM: AST
CONTACT: 081-568 4350

Realistically, there are just too many different PCs on the market at the moment. So many, in fact, that it's understandable that potential computer buyers could easily be confused by the number of options open to them.

In order to make an impression in this competitive market, computer companies have to not only offer well-specified machines that are good value for money, but the machines also have to possess features to make them appear more attractive to consumers. AST has tried to do this with the Bravo 286 and 386SX PCs which are part of its new range of machines.

Physically the two PCs look almost identical to each other, but internally they have very different specifications. The Bravo 286 is equipped with an 16MHz 80286 processor and 1Mb of RAM, whereas the Bravo 386SX/20 has a 20MHz 386SX processor and a healthy 2Mb of RAM. If required, they both can be expanded up to 16Mb on the system board.

CONSTRUCTIVE COMMENTS

Both machines are solid and well built. They each have a metal case, which not only prevents the emission of electromagnetic signals from the computer, it also provides a solid platform to put a monitor on. Some people could have a problem with the size of the cases, though: they take up a lot of desktop space.

In terms of input/output there are two serial ports, a parallel port, a PS/2 mouse port and a video port that gives output from the integrated VGA graphics card.

There are also five empty 16-bit expansion slots on the motherboards of the machines. This is quite a large number considering that most of the functions that would normally require add-on cards have been incorporated on the motherboard, including the VGA graphics support, serial and parallel ports and the disk drive controller. The integrated VGA card can display Hercules, CGA and EGA graphics as well as VGA.

In terms of storage, both machines come with a 1.44Mb 3.5-inch floppy drive and a 40Mb hard drive. Both of these are fairly standard in AT-class machines such as these.

The keyboard supplied with both machines has a good 'feel' to it. The keys are light and responsive, and once pressed they give a definite feedback. It is a normal 101/102-key AT-type design and is, as usual, detached from the main body of the machine.

WHAT'S UP DOCS?

Unusually, perhaps, the construction of the manuals reflect that of the machines: they are very good. The manual for both computers is clearly set out and very informative. Not only that, the information is arranged in an intelligent order and also includes technical details.

Having such technical information in a basic manual such as this is not the norm. It clearly explains how to remove the case of the machine and how to fit cards in the expansion slots, as well as giving more standard details such as the pin-outs of the various ports. Many companies seem to think that this sort of information is too complicated for their customers and they don't include it. So, when users eventually do want the information they end up phoning the company, or endangering themselves and their systems by undertaking the job without proper guidance.

In terms of performance, neither machine is outstandingly fast or special. Actually, this is the case with most PCs – they are so similar to each other that often the enhancements are to improve aesthetic appearances rather than hardware performance.

BALANCE OF POWER

In general, a PC's performance is proportional to the processor it is running on – thus, a 20MHz 386SX is considerably faster than a 16MHz 286. However, processor speeds on their own aren't the only determinants of good performance – the 386SX can run 32-bit applications and operating systems that require at least a 386SX processor, which opens up a whole range of possibilities. The Bravo 286 can be upgraded with the addition of a 386SX processor for £565.

• Both AST's Bravo 286/16 and 386SX/20 computers look like this on the outside, but the two are very different in terms of performance

AST has endeavoured to get as much performance out of the machine's standard components as possible. The company has used its own BIOS (Basic Input Output System) which, it claims, improves performance by providing features such as Shadow RAM. Shadow RAM is a portion of memory that has been set aside to hold a copy of the system and video BIOS, enabling them to run in high-speed memory instead of slower ROM (Read Only Memory).

In terms of hardware, the company has used surface mounted components and its custom ASIC (Advanced Specific Integrated Circuits) which, it also claims, increases performance and reliability. These features do appear to make a difference in the overall performance of the machines, but it is difficult to determine which enhancements are responsible for the improvements. In any case, both machines perform quickly and smoothly with no obvious problems.

IT'S YOUR CHOICE

Prospective PC buyers could do much worse than look at these two AST machines. However, making a choice between them is more difficult. There is a difference of £540 between the machines and if you can afford it, the 386SX machine offers much better performance. However, the 286 machine can be upgraded to a 386SX, albeit a more expensive option overall.

The Bravo 286 would be a good machine for low-end users or companies which need an intelligent terminal for their local area networks. It works well and would be ideal for people who don't need enormous amounts of processing power. ■

SPECIFICATIONS

Model:	AST Bravo 286	Model:	AST Bravo 386SX/20
Processor:	80286 (16MHz) (upgradeable to 386SX)	Processor:	80386SX (20Mhz)
RAM:	1Mb (expandable to 16Mb)	RAM:	2Mb (expandable to 16Mb)
Storage:	1.44Mb 3.5-inch floppy 40Mb hard drive	Storage:	1.44Mb 3.5-inch floppy 40Mb hard drive
Ports:	2 serial; 1 parallel; 1 mouse; 1 graphics	Ports:	2 serial; 1 parallel; 1 mouse; 1 graphics
Dimensions:	40 x 16 x 42 cm	Dimensions:	40 x 16 x 42 cm

DOES IT PASS THE TEST?

FOR
- **▲ Solid and consistent performers**
- **▲ Very good documentation**
- **▲ The 286 can have processor upgraded**

AGAINST
- **▼ Large cases**

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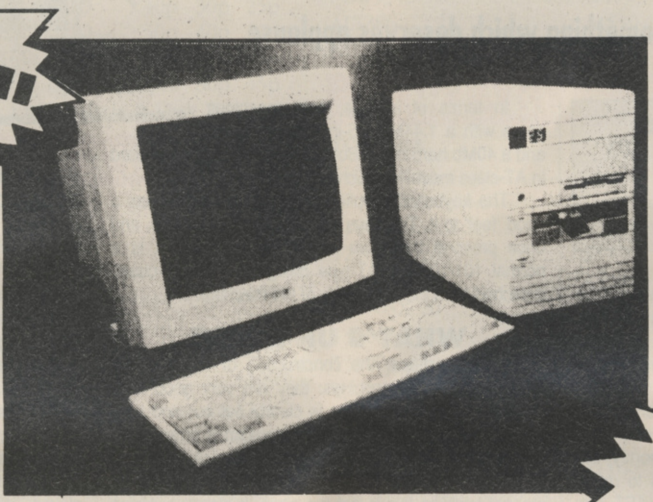

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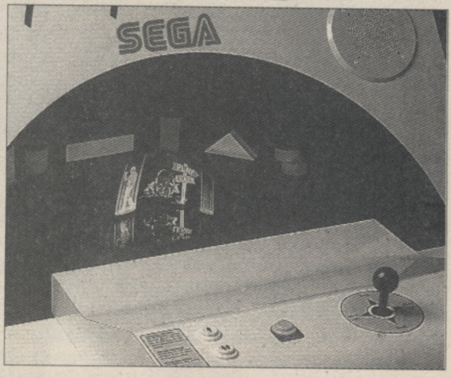
HOLOGRAPHIC HORIZONS

Will the world's first 'hologame' start a new trend or take a one-way trip to the arcade graveyard? Rik Haynes speaks with the enterprising entertainment engineers at Sega...



Who would have guessed fifteen, or only five years ago, that players would be seeing arcade games with holographic displays? One of the first new breakthrough amusements in years, the *Time Traveler* hologame is a truly epic production featuring Hollywood actors, digitally mastered music and goofy scenario. Who could ask for anything more?

Rick Dyer of Hologram Ventures in San Diego is the 36-year-old inventor and co-developer of the hologram system. The fact is, Dyer is no stranger to fantastic gadgets and interactive entertainment. As a teenager he devised a crazy cuckoo clock that quoted famous philosophers every hour, while a voice-activated robot called Fnork was the result of his days at Pamona Polytechnic in California, studying for an electrical engineering degree.

Dyer was soon thrown into the hectic world of *Donkey Kong, Centipede* and *Defender*, when he helped Mattel make Mattel-O-Vision and Coleco create ColecoVision. The latter home video games system was probably the most advanced console of the early 1980's. Where else could you play a gorgeous game based around the Cabbage Patch Kids?

Then, in 1982, Dyer masterminded *Dragon's Lair*, the world's first laserdisc game. Before forming Hologram Ventures, he produced the multi-lingual PowerCize programmable robotic fitness equipment that speaks to you during a workout.

THE HOLOGRAM'S TIME HAS COME

Tom Petit, president of Sega Enterprises in the USA, is the other leading light on the hologame project. With 16 years experience of the coin-op industry, Petit has seen fads come, go and eventually come back again. "Every five years we see a new type of technology," remarks Petit, "Hologram is a technology whose time has come."

Time Traveler is the first Sega coin-op to be developed outside Tokyo. The holographic images are reproduced using laserdisc generated video and a novel optical set-up. Light from the 20-inch monitor screen is reflected by the patented concave spherical mirror to form a 'real image' of the picture on the monitor screen in a space above the horizontal axis of the mirror. These visuals aren't strictly holographic in the true sense of the word, they just give an illusion of extraordinary three-dimensional imagery.

"Essentially we're taking video source stored on a laserdisc, running it through a Sony monitor and bouncing that signal off the optic," Petit explains, "It performs some magic and the hologram pops up on the stage".

The technology offers some fantastic opportunities for the players. Perhaps we'll have some form of VR in the future

The precision-optics mirror is made by a North American aviation subcontractor who also manufactures cockpit canopies for jet fighters. This is just one of the many reasons why Sega believes the new generation of laserdisc gaming is far more durable than those early examples like *Dragon's Lair, Space Ace* and *Firefox.*

"Sony's LDP-1450 is an industrial player designed for long term reliability and use, reveals a spokesperson, "Laserdisc technology has dramatically improved over the past five years. The evolution of solid state lasers and advances of a mass storage disc system now allow much simpler and more reliable laserdisc players."

Classic hallmarks of the old technology such as high temperature gas lasers and analogue mechanism have been replaced by super efficient direct digital control and specially designed integrated circuits.

"I don't think we would have undertaken this project eight years ago," Petit confirms, "the scan times are a lot faster now so we're able to do a game that doesn't have the extensive lag-time that plagued older games."

Sega's spokesperson is still keen to stress the simple architecture and proven components inside *Time Traveler* and adds: "Arcades can throw away their Out of Order signs".

HEROIC TIME TRAVELER

All this technology and trademarking is very dandy, but what about the actual game? A 50p coin in the slot temporarily turns you into the heroic Time Traveler Marshal Gram. This happy-go-lucky guy who talks with a cowboy twang and moves with similar enthusiasm, journeys from prehistoric time through the future to rescue Princess Kyi-La from the clutches of the evil Vulcor. This renegade scientist has disrupted the Time Continuum of the Universe and needs sorting fast.

With seven play-areas, from prehistoric caves to 26th century spaceships, Gram encounters an odd assortment of weird characters including Amazons, punk rockers, knights in armour, Ninja warriors, cavemen, ghosts and Indians. To complete some of the adventures Marshal must attack the enemy, in others he must simply avoid them to stay alive. Gram can move left or right, shoot, punch, use a sword, jump or duck. When lit, the Reversal Cube button will reverse time and help him escape death. Pretty simple, eh?

"There's a variety of choices that the player has to make so it's very interactive with a fair amount of strategy involved as well," reckons Petit, "There's a tremendous amount of thinking on your feet."

Sorry to throw a damper on this digital delight, but the game isn't really geared towards the skillful joystick jockeys out there. Players only have to survive for four or five minutes before they make it to the final shootout scene!

Nevertheless, *Time Traveler* incorporates over 30 minutes of expensive film time. Action in the game appears not on the video screen, but on a freespace

A TRULY GLOBAL HIGH TECHNOLOGY ELECTRONIC ENTERTAINMENT GIANT

Ever since US-based Gulf & Western Industries sold Sega seven years ago, the objective has been to transform this Japanese company into a truly global high technology electronic entertainment giant.

During this time Sega has built-up a reputation for innovation in both the home and arcades. By pioneering motion simulation games, typified by *Space Harrier* and *R-360 degrees*, Sega has changed the nature of the amusement machine industry. In addition, the firm's new concept large-scale leisure centres have proved tremendously popular in Japan. The Space World amusement park in Fukuoka, for instance, features all the most successful Sega games.

Last year, over Yen3.5 billion was spent on the research and development of new projects. One of the most important examples of this pioneering spirit was the release of the first 16-bit home video game console in late 1988. The Sega Megadrive is giving even the mighty Nintendo a run for its money. Everybody is keeping a close eye on the upcoming Megadrive versus Super NES 'Battle of the Consoles' in the USA this autumn, with the winner probably commencing a mopping-up action over here next year. Then there's the recently announced Mega-CD accessory, which not only expands the data storage capacity of the Megadrive to a massive 550 megabytes, but also enhances the system's graphics and sound capabilities to coin-op status. Not bad going for the people who originally produced Buck Rogers!

The acquisition of Sega's European distribution operation from Richard Branson is seen as the latest smart move for the company's corporate cowboys. What will Sega do, or buy out, next?

stage located in front of the control panel. The stereo output of the laserdisc player is amplified and then sent to high fidelity speakers so players can hear the specially composed music score, voice dialogue and sound effects.

The Ninja warriors and punk rockers seen and heard in the game aren't ordinary sprites, they're real actors from Hollywood. No wonder it was such an expensive effort. Almost 1,000 actors auditioned for the 35 speaking parts in this off-beat movie. Perhaps Sega has previewed the next Arnold Schwarzenegger or Julia Roberts? Marshal Gram is played by Steve Wilbur, an actor and professional stunt co-ordinator, and Princess Kyi-La is, in fact, an aerobics instructor from Las Vegas called LeAnne McVicker.

THE REAL CHALLENGE

"Basically you shoot all the footage, filming Marshal Gram and the other characters going through their physical motions," describes Petit, "You put all this down on tape and then go into the studio and add all of the special effects around it: the lightning and thunder, fire and flames, explosions, light prisms, and so on. Then you lay the digital soundtrack. Finally, you sit with your programmers and start to code gameplay that takes advantage of these fantastic graphics and sound. That's the real challenge – blending the video into the game and making it all fully interactive."

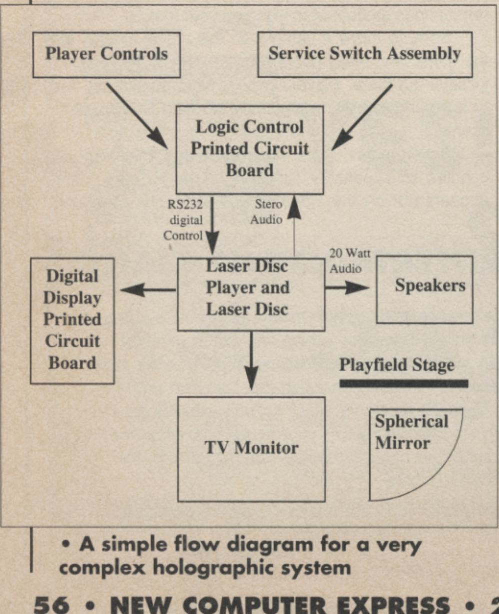
A further team of almost 100 people laboured night and day on the project for something like 10 months to perfect this final stage. Surprisingly, Sega employees resisted the temptation to slip into a costume and star in the game. "Not with this one, " Petit laughs.

Hologram Time Traveler is the first in a whole new generation of arcade entertainment products that will take Sega into the next century. Dyer and Petit are already devising new games and storylines which utilise Sega's optical-mirror patents. Future hologames could swap the laserdisc for a CD-I player, PC hardware or a dedicated slab of silicon.

X-RATED HOLOGAMES?

Sega has already contacted major men's magazines including *Playboy*, so could there be an X-rated hologame on the way? Dyer is currently exploring more business-like applications for the hologram technology with his friends at With Design in Mind. Together, they're offering far-sighted companies the chance for 3-D 'point-of-sale' window widgets to promote their products in Japan, Europe and the USA.

Those hungry for further trivia may like to note that this was the original reason why the holographic laserdisc video technique was introduced to unsuspecting punters. A Japanese advertising company called Dentsu has been using this technology for quite some time now. Sega's engineers just adapted the principle and made the whole thing a lot cheaper to make.



• A simple flow diagram for a very complex holographic system

Tom Petit is very cagey when it comes to talking about other hologames in the pipeline. "We're looking at future games and applications for the technology," he promises, "the technology is so wide open that there's a variety of things we can do with it. I don't believe we have to do a big budget Hollywood-style effort to be successful. Sure, that's the initial approach we've taken, but I think there are others as well. We're playing with a lot of that right now. There's more than one way to skin a cat!"

THE ENTERTAINMENT FACTOR

So what are the important factors in creating a good hologame? "We must maintain the one key focus that we are in the entertainment business. We're selling entertainment and every hologame has to be entertaining. A game has to represent a reasonable amount of challenge and provide the player with an intrinsic feeling of enjoyment without an extensive amount of frustration. It's a fine balancing act which you have to blend in order to make a successful game.

Players want to be exercised physically as well as mentally and if you do your job properly you can bring out both of those factors within them. Players tend to like fast action and control over their own destiny. They like to face decision-making situations representing a challenge, but they also want to have fun.

If you can take all those psychological and physical factors and combine it into an experience that represents entertainment and amusement then as an end result you've got yourself a good product. That's what we're trying to achieve with every game we do, not only hologram titles like Time Traveler."

INTERACTION AT THE MOVIES

If the rapid development of arcade video games continues we could be playing interactive movies within the next five years: "Just look at some of the fantastic applications of new technology and some of the things we're able to do now with CD-I and laserdisc.

> **The simple architecture and proven components inside Time Traveler means Arcades can throw away their Out of Order signs**

"Interactive movies are underway at several different groups at this time. There are some difficulties preventing them from making the interactive movie a reality, but it's funny how we always find a way around those barriers. Most of these are divisions of technology and cost-effective applications.

"I think we're going to be playing games that offer an on-going growth of visual technology. Sega has just introduced a 32-bit system and it will only be a matter of time before the cost effective parameters of 64-bit games are real for us.

"We have one at Sega that we're working on right now that's going to be a very powerful system. This is our first venture into polygon graphics. We will have a series of projects that we'll release utilising that technology. It offers tremendous capability and provides the designers with an opportunity to create their own worlds so the player can go in and access any point within that universe and experience something there. The technology offers some fantastic opportunities for the players. Perhaps we'll have some form of VR in the future."

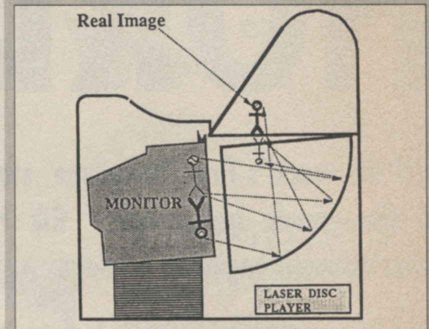
Sega is to be congratulated. The holographics of *Time Traveler* are a neat visual gimmick which seems to keep the crowds happy. At the end of the day, I personally prefer the ultra-violent charms of that other new laserdisc game on the scene...*Mad Dog McGee*! ■

Hologram Time Traveler *is already being played by game addicts in the US and Japan and its here in the UK right now. You can test your gameplaying skills at Mr B's in Southend and West End arcades.*

PATENTED DISPLAY SYSTEM

The Hologram TM *Time Traveller* game utilises a display system defined in the United States under Patent Number 4,776,118. The basic elements of this system are the following:

1) A cathode-ray tube (TV Monitor).
2) A black surface, concave spherical mirror.
3) A light-shielding structure.



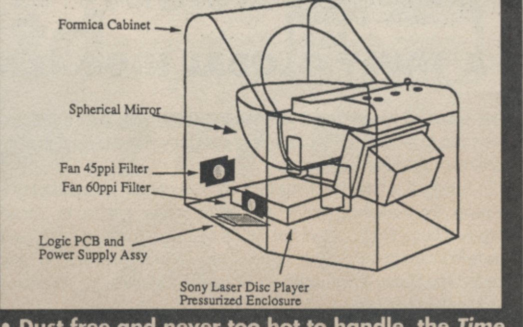
United States Patent Number: 4,776,118
Date of Patent: October 11, 1988

• The concave spherical mirror and monitor are arranged such that light from the monitor screen is reflected by the concave mirror (indicated by dotted lines) to form a "real image" of the picture on the monitor screen in a space above the horizontal axis of the mirror

SYSTEM FILTERING AND COOLING

The Hologram *Time Travelle*r Game contains two 105 CFM fans which provide cooling and air filtration. The air is drawn from outside the cabinet and is filtered by a 45 PPI (Pores Per Inch) filter which removes course dust particals from entering the inside of the system and provides cooling for the Logic Control PCB and Power Supply Assembly.

Once the cool air is drawn into the cabinet, it is again filtered by a 60 PPI filter to remove fine dust particals from entering the Laser Disc Player Enclosure. By forcing filtered, positive air pressure into the Laser Disc Player Enclosure, dust accumulation is minimal inside of the Laser Disc Player, and cooling in this area is provided as well.


Formica Cabinet
Spherical Mirror
Fan 45ppi Filter
Fan 60ppi Filter
Logic PCB and Power Supply Assy
Sony Laser Disc Player Pressurized Enclosure

• Dust free and never too hot to handle, the *Time Traveler* has its own filtering and cooling system

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Until the mid '80s producing flashy-looking video graphics for films and videos was an expensive business. Professional editing suites would cost hundreds of thousands of pounds, so even something fairly simple, such as superimposing a reporter's name on screen during a news item, would be well beyond the financial reach of anyone outside a leading film or television company.

But with the advent of the home video, portable video cameras and, most importantly Desktop Video, all this has changed. Now anyone with a computer and a video recorder needs only one more element to have an editing suite in their own home, and that is a genlock.

Genlocks take the incoming signal from a video and enable it to be displayed on a computer monitor. Once there, the signal can be combined with graphics created with an art software package, such as *DeluxePaint*, or a titling package, such as *Video Studio*, or even with scanned or digitised images.

One of the leading genlocks for the Amiga is the Rendale Super-8802 from Marcam Limited in Northampton. A low cost device (£199.99) which produces near broadcast quality results, the Rendale Super-8802 has the been the staple product of Marcam's range in the four years since it was first launched. Over 10, 000 have been sold world wide both to serious enthusiasts and businesses.

For example, the company recently had to specially redesign the genlock for use on Concorde. The pilot wanted a device which could flash up 'fasten your seat belt' and 'please extinguish your cigarettes' messages over the video films being shown. However, the normal genlock would have interfered with vital radar signals, so a slightly modified version had to be installed.

Now Marcam has upgraded the 8802 to take advantage of the higher quality pictures available with Super-VHS. The new Rendale Super-8802 also has a number of other exciting enhanced features:

- ● Hardware controlled 'fades' where the graphics dissolve into or out of the picture.
- ● Hardware controlled 'wipes' – where the graphics are wiped from the screen horizontally, vertically, diagonally or even in an explosion effect.
- ● Cross fades between the image on the Amiga monitor and the video image.
- ● An integral switching mode which means that you can look at all of the incoming images individually or combined using just one monitor.

The new Rendale Super-8802 would normally set you back £599.99 (£420 for existing 8802 users). But this wonderful piece of televisual technology could be yours for the price of postage stamp and a little expenditure of mental energy.

All you have to do is answer the four questions below stick them on the back of a postcard or an envelope and send it to the following address: Genlock Competition, *New Computer Express*, 29 Monmouth Street, Bath, Avon BA1 2DL. ■

SO, YOU WANNA FREE GENLOCK?

Then tell us...

1 Which pop music television show uses Amiga graphics?
a) Top of the Pops
b) Songs of Praise
c) The Chart Show
d) The Hitman and Her

2 What is the colour traditionally used in the 'chromakey' technique to overlay one video picture on top of another?
a) Green
b) Black
c) Blue
d) Harvest white

3 Which of the following programs would be best suited to creating impressive title sequences for your home videos?
a) Adobe *Photoshop*
b) *Lemmings*
c) *DeluxePaint III*
d) *Norton Utilities*

4 Which of the following would you not use for desktop video editing?
a) A computer.
b) A frame buffer.
c) A cocktail mixer.
d) An RGB monitor.

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You have until 6 September to send in your entries to This time I'll get it right compo, 29 Monmouth Street, Bath, Avon BA1 2DL.

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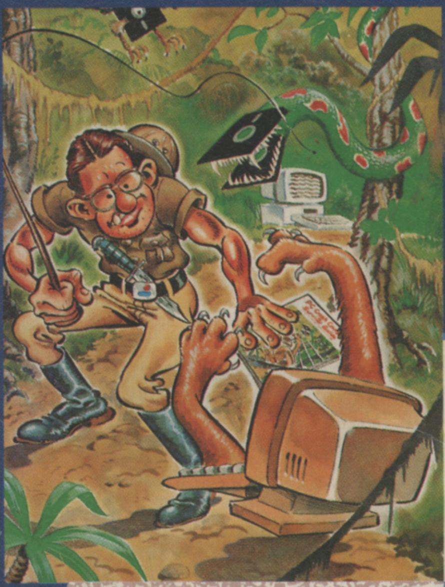

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